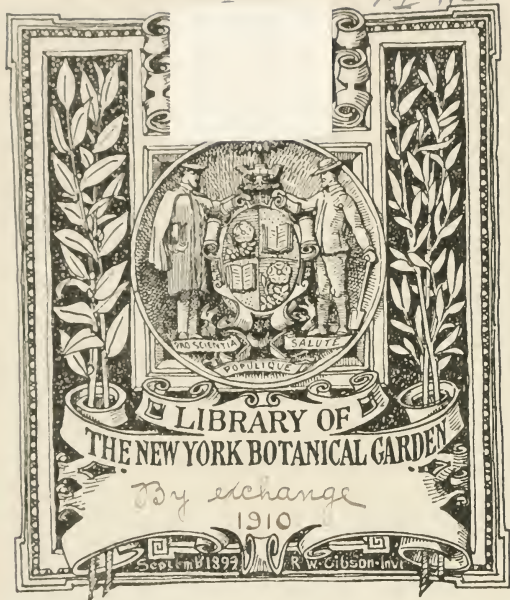
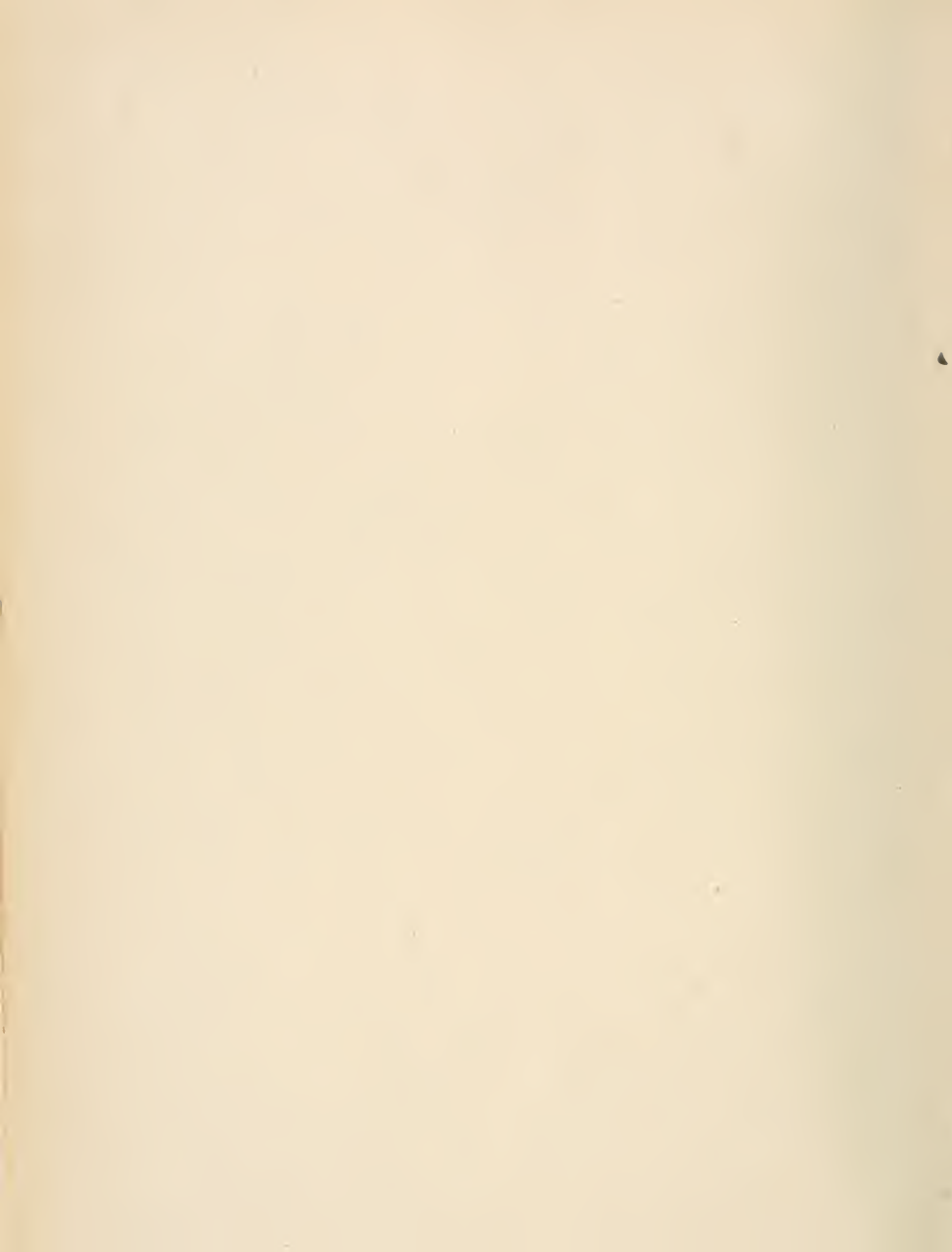


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IRISH GARDENING

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

VOL. V.

JANUARY TO DECEMBER, 1910

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JANUARY, 1910

TWOPENCE

Irish Gardening

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IRISH GARDENING

VOLUME V.
No. 47

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

JANUARY
1910

The Present Position of Horticulture in Ireland

By F. W. MOORE, M.A., A.L.S., Director Royal Botanic Gardens, Glasnevin.

IN the opening number of IRISH GARDENING, March, 1906, I wrote an article on "Present Conditions of Horticulture in Ireland." In that article I was optimistic as to the then condition of horticulture in Ireland, and as to its future prospects. I wrote "Horticulture in Ireland at the present time is in a healthy and progressive state." I am reminded that it is now four years since that article was written, and the question naturally suggests itself: "What of your erstwhile confidence, what of your complacency, what of your prognostications?" It is now full time that a fresh stock-taking was made, and that the position be reviewed. I have re-read the article, I abide by it, and invite serious contradiction on any of the general statements made in it. There is ample evidence that the progress has been continuous, not in all branches of gardening, but in those branches which now find favour, and especially in branches which tend towards the material welfare of the people of this country. There appears to be a steady decline in the popularity of indoor gardening, and I regret to say in the class of plants grown indoors. Collections of stove plants, of hard wooded plants, of ferns, of orchids, and of many old and popular occupants of our conservatories have become less numerous, and but few specimen plants are to be found. These have been replaced with plants of rapid growth, plants which can be easily discarded when shabby, and quickly replaced with a fresh batch, and with annuals. Show Pelargoniums, Ericas, Epacris, Eriostemon, Acacias, Diosmas, Genetyllis, Azalea, Camellias, Crotons, Dra-

cenas, Anthuriums, Orchids, have made space for Cyclamen, Primulas, Cinerarias of various sections, Schizanthus, Campanulas, fibrous and tuberous rooted Begonias, Mignonette, Zonals, Deutzias, deciduous Azaleas, and similar plants, and in these the strains now grown may fairly claim to be a distinct advance on their older types. One difficult subject may not only be said to have held its own, but to have made rapid and remarkable progress, that is the carnation. It is more extensively grown than was formerly the case, the varieties grown are better, and the plants are better grown. In outdoor gardening there are also changes. Formal bedding out continues to disappear, and has been replaced with a much higher class type of gardening. Of old favourites the rose still reigns supreme, and continues to advance all along the line. Out-door roses are at present grown by more gardeners of all sorts than ever before, and the type of rose has improved, fortunately without attaining the huge dimensions and loss of refinement which has been the fate of many popular flowers, qualities which helped to dethrone them from the proud positions they occupied. A small, refined, clean-coloured rose, with perfume, still carries its points on a show-board, or in a vase, and no flower is more gratefully accepted by those who have not a garden. The great advances in outdoor gardening are along correct and permanent lines. Herbaceous plants, alpine plants, and rock-gardens, aquatics and bog gardens, and flowering shrubs are the specialities one finds receiving most attention in present-day gardening. The advance in the cultiva-

tion of these plants, perhaps in one set only in any particular garden, is as marked as it is gratifying, and brings us nearer to nature, to happiness, and to contentment with our gardens. Where these plants have been taken up, the owners of the gardens have in many cases become, not only owners, but growers, and they have acquired an accurate and critical knowledge of the nature, habits, and requirements of their pets, which adds a zest and interest to garden work and frequently brings that commendation to the gardener which he sighed for in vain under former conditions, and gives also that same zest and interest to him which stimulates to further exertion. The plants in each of these particular groups have increased in number, in beauty, and in interest. In herbaceous plants we have still most of the old favourites, but we have in addition many beautiful new forms of garden origin, and many recently introduced species. Take such popular *genera* as Delphinium, Trollius, Spiraea, Phlox, Penstemon, Iris, Paeonia, Anemone, Papaver, Campanula, Helianthus, Aster, Kniphofia, Eremurus, Lobelia, and will anyone contend that there has not been progress in this department. Amongst the alpine the advance is even more marked. An intelligent interest in this class of plant had led to the conclusion that many old rock gardens were faulty in construction, and they have been re-made, or new rock gardens have been constructed. Coarse plants which had no claim to be classed as alpine have been banished to the herbaceous border, and to meet the demand thus created for more species to fill the vacancies, alpine have been introduced from all parts of the world to such an extent that special lists are now published of alpine only. In Aquatics the same story may be told. Latour Marliac's hybrid Nymphaeas gave the necessary impetus, and in most gardens where such a thing is possible a pond of varying dimensions is now to be found—a pond, not taken up with spouting dolphins and mis-shapen fairies, or nymphs in impossible and contorted positions, but glistening with nature's jewels, flowers from pure white through every shade to yellow, and to deep red, set in the best of all settings, their own beautiful green foliage, the whole framed with edgings of Primulas, Calthas, Iris, Lysimachia, Orchid, and other plants which delight in the swamp. Is not this

progress? It is, however, in hardy-flowering shrubs that the most advance has been made. Lemoine, at Nancy, started cross-fertilising several groups such as *deutzia* and *philadelphus*. Results were slow at first, but when once these plants became known they quickly caught on. Lemoine recognised the possibilities which lay latent in such plants as *Deutzia discolor*, and *D. parviflora*, from China, *Philadelphus microphyllus* from Colorado, and using our good old garden friends *Deutzia gracilis* and *Philadelphus coronarius* as parents to mate with these novelties, he produced the garden races which carry his name, and add so immensely to the wealth of our gardens. In all groups of shrubs we have advanced. With the Newry barberries and brooms we could plant a garden and make it beautiful. Roses single, and semi-doubles, rampant, decumbent, or bush-like, all add to the list. Ceanothus, Weigela, Skimmia, Rhododendron, Magnolia amongst others have advanced. I hardly think it necessary to add further proof that there has been even in the last four years a distinct advance in horticulture, and that Ireland has participated in the advance.

The Knotweeds (Polygonum).

By J. W. BESANT, Royal Botanic Gardens, Glasnevin.

WITH the revival of interest in wild gardening and the cultivation of hardy plants generally—plants possessing beauty of form and foliage, as well as flower, are yearly being more and more requisitioned for the furnishing of our gardens.

Although a few members of the genus *Polygonum* have continued to occupy a place by the water-side, in the herbaceous border and on the rock-garden, there are others which have received less attention than their merits demand. From the dwarf *Polygonum affine*, 6-8 inches in height, to the gigantic *P. sachalinense* is a wide variation, while between them are many worthy species capable of adding much beauty and interest to our gardens. The stronger growers are excellent for forming bold masses near water or by a woodland walk, but should be planted judiciously, having in view their quick-spreading propensities. The dwarf forms add much beauty to the rock-garden and the front of herbaceous borders, while the inter-

mediate sorts are useful for borders or specimen beds. Practically all are of easy culture in any average soil; indeed it is better not too rich if moist enough, otherwise foliage is apt to develop at the expense of flowers.

Polygonum affine, from the Himalayas, is an admirable species for the rock-garden or front of a border. From among a carpet of leaves spikes of rosy-coloured flowers are produced in profusion, while later in the year the leaves assume a ruddy bronze hue.

branches of shrubs or thin trees, and is an excellent plant for pergolas, for covering a dead tree up to 20 feet in height, or any other support which will give plenty of space for development. The shoots, as they grow, become woody, and from the ripened growths beautiful panicles of blush white flowers are produced in wonderful profusion. *P. auberti*, which has recently appeared in nurserymen's lists, is said by some to be superior to the preceding, while others declare it to be inferior.



Photo by]

POLYGONUM VACCINIIFOLIUM

[C. F. Ball

Growing at Mr. T. Smith's Nursery, Newry.

P. alpinum, a native of Southern Europe, grows about a yard high, producing moderately large leaves and beautiful feathery panicles of white flowers. This is a useful border species, flowering in June.

P. amplexicaule, from the Himalayas, is somewhat similar to the preceding in form and habit, but the flowers are bright red and the upper leaves stem-clasping.

P. baldschuanicum, from Bokhara, is a distinct member of the genus, being of twining habit. This species produces long shoots which raise themselves by twining round the

Not having flowered at Glasnevin, further comments may be deferred.

P. bistorta, a native species frequenting moist meadows, has ovate leaves, and produces dense spikes of reddish-pink flowers on stems some 18 inches high.

P. capitatum, a dwarf Himalayan species, is best treated as an annual. It rarely exceeds 6 inches in height, but spreads freely in summer, producing green leaves marked with dark V-shaped bands and dense heads of pink flowers.

P. cilinode is a North-American form of trailing habit, quickly covering any support with a

mantle of green, crimson-veined leaves, and producing freely sprays of white flowers.

P. compactum hails from Japan, and is one of the best of the intermediate growers, reaching a height of 3 feet. The dark-green leaves are moderately large, and the sprays of white flowers are extremely pretty.

P. cuspidatum, a rather well-known Japanese species, is one of the giants of the genus, often reaching 9 feet in height. It is a rampant grower, and should be accorded a position where it may spread without doing harm, otherwise trouble ensues. By the water-side it finds a congenial home, and produces long, graceful stems, clothed with ample green leaves, and producing pendant feathery panicles of creamy white flowers.

P. filiforme, also a native of Japan, is best known by its variegated form, a beautiful plant, producing shoots some 4 feet in height, and large oval leaves, prettily mottled green and yellow.

P. lanigerum, a tropical species, is not hardy, but is so distinct and beautiful as to be well worth growing for the summer garden. The stout stems will grow to a height of 6 feet and over, and bear enormous silvery white leaves, which have a fine effect when the plants are grouped or massed in association with the other occupants of the garden. The roots may be lifted and kept in a frame through the winter.

P. molle, a compact habited plant from the Himalayas, is somewhat in the way of the Japanese *P. compactum*. It grows about a yard high and bears panicles of white flowers in July.

P. multiflorum, from China and Japan, is a rapid-growing climber, attaining a height of 15 feet. The stems are reddish, producing rather pretty medium-sized leaves, from the axils of which arise panicles of white flowers.

P. polystachyum, another Himalayan species, makes a very fine bed, and is a useful border plant. It grows 5 or 6 feet high, and bears pink flowers in sprays.

P. sachalinense, introduced from the Sachalin Islands in 1869, is in many respects similar to *P. cuspidata*, but assumes even more gigantic proportions, reaching occasionally a height of 12 feet. The stems are stout and angular, in which latter respect it differs from *P. cuspidatum*, and the flowers are not so white. There are two forms of *P. sachalinense*, one bearing pistillate flowers and the other staminate, the

latter being sometimes offered as *P. sach. masculula*. This is a fine species for naturalising by the lake side and in the woodland.

P. spherostachyum, from the Himalayas, only grows about 9 inches high, but is one of the loveliest members of the genus. The leaves are lanceolate, 4-5 inches long, and slightly wavy, while the blood-red spikes of flowers are of surpassing beauty. A moist but well-drained position about the rock-garden is the best place for this really fine plant.

P. vacciniifolium, again a Himalayan plant, is hardly less beautiful than the preceding, and is much easier to grow. The rather small vacinium-like leaves form a dense carpet, from which arise a profusion of spikes of bright rose-coloured flowers produced over a long period. The accompanying illustration, taken by Mr. C. F. Ball in the nurseries of Mr. Thomas Smith, Newry, gives a good idea of the freedom and beauty of *P. vacciniifolium*.

P. viviparum, the Alpine Bistort, is recorded from mountain pastures in Britain, and bears pretty spikes of pink flowers. A curious feature of this species is the occurrence of small tubers or bulbils in the axils of bracts instead of flowers; in some cases half a spike will be composed of flowers and the other half of bulbils. These bulbils offer a ready means of propagation.

The above species comprise the best of an interesting set of plants, among which will be found some suitable kinds for almost any garden.



A Remarkable Plant.

MR. H. H. W. PEARSON is giving an interesting series of articles in the *Gardeners' Chronicle* on a botanical journey in South East Africa, made in connection with the Percy Haden memorial expedition, 1908-9. In the first of the series an account of the vegetation of Bush-matland is given, and among the remarkable plants inhabiting this arid region is a gaunt-looking, pillar-like apocynaceous succulent belonging to the genus *Pachypodium*, *P. namaquanum*. It is popularly known as Elephant's Trunk. The stout, fleshy stem emerges from rocks which daily become so heated in the sun that a thick-soled boot is quite inadequate as a protection, and the nails therein become so much enlarged that as soon as they cool down they fall out. The inner tissues store an enormous quantity of water, and the development of hard-walled cells is so slight that the whole mass can be cut through with the greatest ease by a pocket knife. The large yellow flowers occur in June among the lower of the leaves that crown the stem. The accompanying illustration is copied from part of a large, full-page illustration in the *Chronicle*.

The Hardy Flower Border.

By G. SATTERLEY, Vice-Regal Gardens.

THE above title describes a branch of gardening, a good knowledge of which is important to present-day gardeners, because in most gardens of note there has been a marked tendency in late years to develop the possibilities for beautiful effect of the formerly half-neglected herbaceous border." At first it was intended to deal with herbaceous subjects only, but in practice better results are obtainable when choice is not limited to this class of plant. Undoubtedly these may give a very picturesque effect for a certain period in the year, but too often it is such as might be compared to a fire-work display—very fine while it lasts, but soon over. Personally, it has been very interesting to watch the evolution of the modern flower border. A few years since there was a craze for using only herbaceous plants in the strict meaning of the word, but to anyone with practical experience these used alone have many obvious shortcomings.

On the other hand, the other extreme has sometimes been reached by the too free use of tender subjects. Such have their own sphere of usefulness without taking up valuable space which might be allotted to more useful hardy plants, that instead of perishing on the coming of the first frost, often last a good while after. Furthermore, the foliage of many of these hardy subjects produce while passing into their seasonal period of rest, very charming colour effects most pleasing and picturesque. What are we to consider as being suitable material for our purpose?

To a great extent the object for which planting is being done will decide this question. Usually the borders are planted for garden decoration and the pro-

vision of cut flowers. For the fulfilment of these objects a selection may be made from choice shrubs, herbaceous plants, many evergreen and certain Alpine ones. With this amount of material available choice may be made for either small space or the boldest border conceivable. There is no hard and fast rule as to selection of site. The border might be formed so as to skirt a pleasure-ground, through a lawn, in front of a terrace or wall, or two borders might be made one on either

side of a walk, and in such a case a pergola, clothed with choice climbers, would help to give a fine effect.

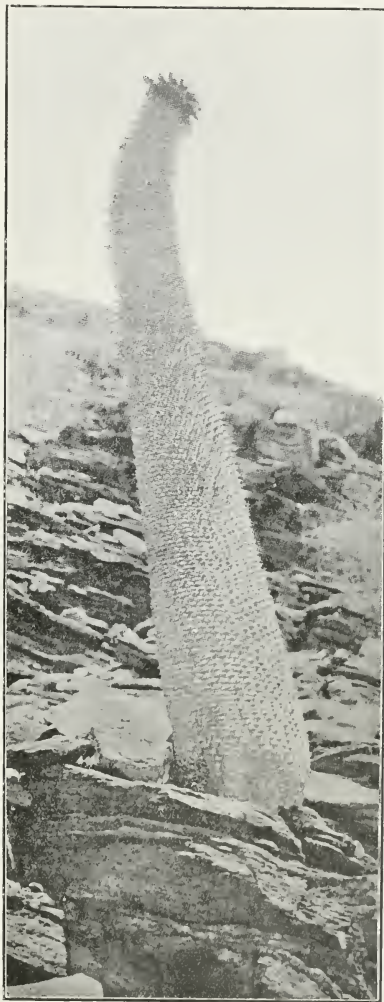
It is desirable to have a good background where this is provided by a wall or terrace; such should be furnished with honeysuckle, roses, wistarias, clematis, and similar climbers. A shrubbery forms a nice background, but care must be taken to have sufficient space between to prevent the roots of strong-growing shrubs from encroaching. Such a space could be utilised as a grass walk. Another way of avoiding this difficulty is by having a sunk background for the shrubbery.

Having decided on the site plans should be drawn out to work by. It is then necessary to ensure a sufficient depth of good soil. A well enriched garden soil, with a depth of three feet or over, should give the best results.

If the soil is sufficiently friable the ground should be trenched, the bottom of the trench broken up, and a liberal layer of manure placed over it, then a spit of soil, another sandwich of manure on this, finishing up with the last spit of soil.

Where the bottom soil is unsuitable for bringing to the surface the manure should be put in as above, but the bottom spit of soil must not be brought to the surface.

On a soil inclined to dry quickly preference should be given to cow and pig manure, while on heavy land plenty of leaves, stable manure, sandy matter, vegetable refuse, ashes and lime should be incorporated. This preparatory work should be



PACHYPODIUM NAMAGUANUM

(Growing in the Rocky Desert, Bushanaland, South East Africa)

done early in autumn to allow for planting before winter sets in, thus allowing for the formation of new roots during winter, and giving every chance for active spring growth. Failing autumn planting, however, any open weather during winter or early spring should be taken advantage of. When planning the border it will be found effective to give a slope to the front, or where viewed from front and back, it should be made barrow-shaped.

If the work is on a large scale plan in sections. Begin by allocating spaces for the boldest subjects, of which a certain number may be foliage plants, as bamboos, thalictrum, phormium, &c. When the border has a single face the tallest and strongest growers are kept towards the back, but when barrow-shaped are planted more or less through the centre. It is not conducive to the best results to keep a uniform height, rather allowing a little freedom representative of natural grouping, here and there a colony of smaller plants running back into and breaking up a clump of stronger growers. The grouping of similar subjects is preferable to growing single specimens, as far as possible avoiding repetitions. Each group should be sufficiently strong to give character without conveying the impression of being too heavy a mass. Certain rules of good taste must be adhered to, as colour blending, foliage effects, absence of formalism, freedom of outline, &c. What boundary will conform to these rules? A bold sweep is often the most satisfactory in grass; this, in some cases, might be judiciously altered by a series of irregular bays and bluffs. Beside walks the boundary is already defined, but the plants may be so disposed as to modify any apparent stiffness. Another good edge may be formed by making irregular pockets of stone of various sizes and planting these with the gems of the collection, letting some ramble over the side of the walk. In this way they are kept under observation, receive a certain amount of protection from stronger growing neighbours, and present a delightfully informal appearance.

There are two methods of planting for effect, one is by working out a colour scheme, a very difficult matter, and the other by planting bold masses for harmonious blending and effective contrast. Where working out a colour scheme the method is somewhat as follows:—A mass of blue leads up to white and yellow, and in a progression of colour through pink, red and orange to pale yellow and white on into lilac and purple. The last must be sparingly used, and indeed are comparatively scarce, as are also good blue flowers. Only the best in their classes should find a place in the scheme. Length of display must be considered, arranging that as one plant dies down another may be growing to take its place. Much may be accomplished in this way by opening and tying out some plants to occupy the space left vacant by earlier subjects. There are many combinations of flower and foliage which will suggest themselves to a careful observer. For instance, in spring the border will be bright with bulbs, notice the fine effect given by yellow narcissi growing through the young, red foliage of herbaceous peonies. Many plants can be freely planted over bulbs, as arabis, aubretia, cerastium, primroses and many more. Other happy combinations are pink roses and variegated

polemonium, antholiza, and pæony, *Lobelia cardinalis* in proximity to *Cerastium tomentosum*, and so on. Other hints are to carpet delphiniums with *Salvia patens*, or planted closely to starworts and aconites. Oriental poppies between tritomas, keeping in mind the flowering season of each and endeavouring not to have blank spaces at any time through the summer at least. Enough has been said on the principles underlying the planting, and another important matter may now be mentioned—viz., staking.

Why do we stake plants? One reason is to provide support for the plant; when this is done early it effects a saving of energy, which would otherwise be used in the strengthening of tissues at the expense of flowers and foliage. Secondly, as a prevention of damage during storms; and, lastly, because by this means we may open out plants to fill up gaps, &c.

For the majority of border plants a convenient method of staking is as follows:—Drive two or three suitable stakes around the plant, and intertwine the stems loosely with the soft tying cord sold specially for the purpose. Lupins, pæonies, and other subjects, made to grow through a wire frame temporarily fixed in the ground, receive invisible support, while the frames, carefully stored after use, will last for years. Delphiniums, verbascums, phlox, and many more give the best results when thinned to a limited number of shoots and tied out singly to suitable stakes as bamboo canes of a green colour; these latter are nearly invisible and very durable. One of the above methods modified to circumstances will be found to apply in a general way to all staking.

After flowering allow time for the ripening of the crowns before cutting down the stems.

Routine work will consist of hoeing and raking frequently, staking and tying, early removal of decaying flowers, seed vessels, &c. Watering with both clear and manure water, will need constant attention.

When flowering is over for the season, where possible, without disturbance, work in some well decayed manure, and fill up all hollow spaces between plants with soil. Divide and re-plant any rampant growers, leaving the slower growing ones undisturbed.

Propagation is the last item of routine to be mentioned. Seed of many, as delphinium, sown in heat in January flower the same season. Others, as *Lobelia cardinalis*, may be rooted by spring and autumn cuttings and by division of crowns. Many are increased by root cuttings and some by layering. Division of crowns ought never to be done by chopping through with a spade. Two garden forks back to back and prized apart accomplish this without much injury. Finally, it may be said, without fear of contradiction, that some of our hardy flowers compare favourably with the best grown under glass. What can be finer than the superb Gladioli, Roses, Delphiniums, Pyrethrums, Carnations, and Chelone, to mention only a few occurring to mind? Can it be wondered at that with such treasures, mostly as hardy as the dock, borders of such have grown so largely in the popular favour? It is for professional men to do their best with available material, so as to make horticulture a pleasure to all, whether adopted as a hobby or as a means of gaining a livelihood.

Notes from Glasnevin.

By R. M. POLLOCK.

DURING these dark winter months we have little to interest us out of doors, and must, therefore, look elsewhere for it and for bright colour. This we find as usual in the conservatories at Glasnevin.

In the large cold house we find many of the Australian plants, among them the Acacias, *A. ovata*, with its pretty

pandanus, dracænas, and the variegated form of the "indiarubber tree," *Ficus elastica variegata*.

In the large conservatory, known as the camellia house, we come to the brightest display of all. Some of the first pot daffodils are to be seen, among them Henry Irving and Golden Spur, two of the best early yellows. The zonal pelargoniums make a fine show, in which Athlete, Jacquerie, and Veteran stand out best.

On one side are groups of two species of Primula, the well-known *P. sinensis* and *P. obconica*, both Chinese



Photo by]

THE ORCHID HOUSE, BOTANIC GARDENS, GLASNEVIN, 1N DECEMBER

[C. F. Ball

round balls of yellow flowers, contrasting well with the dark green foliage, and *A. leprosa*, with long graceful sprays of flowers which are pale yellow. The well-known *Genista fragrans*, just coming into bloom, and a small shrub, also a native of Australia, and belonging to the saxifrage order, called *Bauera rubioides*, with pink flowers. This shrub seems rarely to be out of flower. Passing through the next three compartments, we come to a group of the brightly coloured Poinsettias, now known as *Euphorbia pulcherrima*. In this plant it is not the flower that renders it so remarkable, but the highly coloured upper bracts. The true flower is small and comparatively inconspicuous. Turning to the left of the stove house we find many of the brightly coloured foliage plants of tropical countries, including the crotons,

plants. *P. obconica* is a good cool house plant, and the various shades of colour now to be had makes it still more valuable for decoration. In this house there are also some of the American winter flowering carnations, among them being White Lawson, a pure white; Britannia, bright red; Winsor, deep pink; and Enchantress, pale pink.

Passing through the palm house and small fernery we come to the orchid house, where still may be found many beautiful and uncommon orchids. This section is certainly the most varied in colour, form, and habit, of all plant life. Calanthes and Cypripediums are in the majority, and a popular majority. The pale pink *Calanthe Veitchii*, a hybrid between *C. vestita* and *C. rosea*, raised by Mr. Dominy in Messrs. Veitch's nursery,

with some of its varieties, form the leading colour of the group. There is also *C. vestita* and some of its varieties. The section of Calanthes to which Veitchii and Vestita belong are among the most popular orchids grown on account of their being comparatively easily managed, having bright flowers produced freely, at a very dull time of the year, and which last a long time.

Pages might be written on the various forms of *Cypripedium insignis*, commonly known as the "Lady's Slipper Orchid," but here we will only mention a few of the yellow varieties of *C. insignis*. *Sanderæ* is one of the best, and the plant at Glasnevin is a very good variety, with a very pure and large flower. Mrs. F. W. Moore is another good strong yellow. Among the spotted forms are Baron Schroeder and Harefield Hall. The very effective bright yellow flowers of *Oncidium papilion* and the Butterfly orchid, *O. papilio* are in the group. There are also specimens of *Calogyne Mooriana*, *Cymbidium Tracyanum*, and *C. Winnianum*. *Dendrobium Dearei* and *Formosum giganteum*. In the porch adjoining are the Gloire de Lorraine begonia, including Mrs. L. de Rothschild and Marie, two good pinks, and Turnford Hall, a good white.

Current Topics.

By C. F. BALL, Royal Botanic Gardens, Glasnevin.

THE interest of the readers of IRISH GARDENING will surely be awakened by the recent articles on E. H. Wilson's discoveries in China, his last expedition resulting in such a wealth of trees and shrubs.

Good work has also been done by Mr. G. Forrest, a collector sent to Western Yunnan and Eastern Tibet by the Bees, Ltd., of Cheshire. In the primula family alone thirty-nine species were collected, of which fifteen are new and others new to cultivation. Also there are three new *Lysimachias* and a new *Androsace*. *Rhododendrons*, &c. Many of the Primulas are of great beauty, and will be welcome additions to the hardy plants of this country, and will soon be within the reach of all. *P. Littoniana* is rather like *P. capitata*, with the spike lengthened out like a grape hyacinth. *P. Bulleyana* is like an orange yellow, *P. japonica*. *P. Forrestii* grows on limestone cliffs, and has fragrant yellow flowers. Later on we shall hear of many more new plants, for Messrs. Veitch has sent out another collector to Tibet, who, if he has a safe return, should bring many good things home. So far the Flora is practically untapped from the Sikkim Himalayas up to their entrance into Yunnan.

At a November meeting of the Royal Horticultural Society of London, Messrs. Veitch showed a fine group of their winter flowering Begonias. These are plants which have a great future before them, and a house full of these at Feltham, seen in November or December, is enough to cheer anyone. They were raised by Mr. John Heal by crossing tuberous begonias with *B. sacra-trana*, a winter flowering species introduced in 1880 by Professor Bayley Balfour. They do not stand such a

severe drying off as the tuberous begonias, otherwise they shrivel up. Some of the best varieties are Mrs. Heal, Julius, Winter Perfection, Winter Cheer, and Elatior. Most of them have received awards of merit.

The absurd boom of the French system of gardening seems to be quietly subsiding, and rightly so, for it raised false hopes in the minds of inexperienced people. An instance is quoted of a lady writing to say that she had £25 in capital, and thought she could make a living by French gardening, and by giving lessons in sewing in her spare time. A gentleman who has started on the intensive plan and engaged a French specialist gives the following sensible advice:—"Plenty of capital is necessary, and an expert must be in charge. The site must be open to sunshine, but sheltered from cold winds, and that the best stable manure must be easily procurable in quantity and cheap price. Under these favourable conditions £60 to £70 profit per acre could be made after two or three years, when the business was rightly established."

Great excitement has been created among orchidists by the advent of a new white *Cypripedium*. It was shown by Mr. Bolton, of Wilderspool, Warrington, before the London Royal Horticultural Society, and is said to have all the elegance and beauty of *C. insignis-Sanderæ*, but of an ivory whiteness. *C. Sanderæ* is the mother parent, but the other is not known. The new seedling is to be called *C. Boltoni*.

The ladies seem to be coming to the front both in Horticulture and Botany, and if we take an unprejudiced view, there are some places which they can fill just as well as men. At the annual meeting to hear the report of the National Rose Society the first Dean Hole Memorial Medal was presented to a prominent rosarian, the Rev. J. H. Pemberton, who, in acknowledging the gift, said the credit for his own success as a rose exhibitor was due to the work of his head gardener—i.e., his sister, Miss Pemberton. Again, in Botany, Miss J. J. Clark, B.Sc., has won a place on the Kew herbarium staff, which makes three ladies now in this department.

Lovers of the daffodil will be pleased to hear that the late Peter Barr, who did so much to popularise this beautiful flower, is not to be forgotten. To commemorate his name a Peter Barr Medal is to be instituted, and to be given annually in some way connected with the daffodil, the method of distribution to be chosen by a sub-committee of the Narcissus Society.

The Corporation of Bangor, Co. Down, offered a premium for the best design for laying out a public park. A large number of designs were submitted, and that of Messrs. Cheal & Sons, of Crawley, was awarded the first premium.



The garden I love has a hedge of box,
But the lilies against it lean.
And the silken rosettes of the hollyhocks
Flash crimson 'gainst the green,
And the briar rose showers her petals soft,
Each one like a golden shell,
And the spires of the larkspurs are blue aloft,
With a bee in each love's bell.

Winter Flowering Carnations.

HOW TO GROW THEM.

By KENNETH BEATON, Carrigoran, Newmarket-on-Fergus, Co. Clare.

THE difficulties attending the cultivation of the perpetual flowering carnation are more imaginary than real. The beginner must first grasp a few fundamental points, and by their observance, coupled with an enthusiasm of which the subject is worthy, success will be achieved. For simplicity's sake I commence with propagation. Propagation is best effected from December to March. Growers who have a propagating frame with steady bottom heat of 55 to 65 degrees, should find no difficulty in rooting cuttings of these popular plants. They who have no frame available should use a box with sufficient depth when the cutting pots are placed in it, and covered with glass to allow three inches of space between the top of the cuttings and the glass. Place the box on the hot-water pipes so as to get bottom heat from them. some cocoanut fibre should be placed in the bottom of either frame or box to

the depth of five or six inches. Fill some clean, well-drained three and a half inch pots with a mixture of two portions of good loam, one of sharp sand. Select only strong cuttings from clean and healthy plants, preference given to side shoots near the base of the plant, very little trimming with the knife is necessary, as a sharp pull will usually detach the shoot with what is usually termed a "heel," and cuttings taken thus will root very readily. Insert the cuttings firmly round the edge of the pots, water through a hose, and plunge up to the rims of the pots in the propagating frame or box. Keep close till rooted, paying strict attention to wipe moisture from the glass, shade from bright sunshine. The cuttings will then be ready for repotting singly, which must be done before the roots get into a tangled mass. Use clean, well-drained three inch pots for this purpose, and shade until the plants are established. The soil for this purpose should be three portions good loam—one

of sharp sand. Grow the plants on steadily in a temperature of about 50 degrees. When well rooted and growing, stop them by taking out the centre of plant, stopping them will encourage the shoots which will eventually carry the flowers. Admit all the light and air possible to enable the plants to build a sturdy growth. As soon as they become sufficiently rooted the final potting should take place, choosing the pots in sizes according to the strength and vigour of the plants. The loam for this operation should be good and fibry, with sufficient sand to keep porous; a five inch pot of some fertilizer might be added with advantage to a barrow load of loam. Use clean, well-drained pots, and pot firmly to ensure success. Now,

a word or two on watering. I know of no plants that are more sensitive to stagnant moisture in the soil. Plants requiring water can easily be ascertained by rapping the pots. If they emit a hollow sound give sufficient water to soak the whole ball of soil. Never water by dribbles, as some are apt to do. If the plants are in charge of one individual, which they should be if possible, he will soon find out their requirements, and which they require to bring them to



Photo by]

PRIMULA BULLEYANA

[Bees, Limited

(Collected by Mr. Forrest in China, for Messrs. Bees, Limited, Liverpool, and given a First-class Certificate by the R.H.S. of Eng. The inflorescence is 12-15 inches high of 2-4 whorls. Rachis and pedicels, mealy. Flowers, $\frac{1}{2}$ -inch in diameter, orange cadmium. Leaves bright green, finely serrate; midribs tinged reddish purple at base.)

perfection. If a special house is not provided for them the best position for them is in frames, as they are then more under the grower's control than if stood in the open. Stop all flowering shoots until the middle or July, after that no stopping is necessary. Admit plenty of air day and night. Pay strict attention to staking and tying. A light shading is beneficial if the sun is very hot. The plants should be placed in their flowering quarter in early September. Give occasional waterings with liquid manure water when the flower buds are swelling up; watering must be carefully attended to. If the plants suffer from carnation rust it is best to cut off all the affected leaves and burn them. Although this will certainly spoil the appearance of the plants for a time it is the most effectual remedy. Spraying with potassium sulphide will check the disease spreading. If the plants are well grown little trouble will be experienced with disease and insects.

The Reader.

THE LATEST ON SPRAYING.—The present Report* is of a technical nature, as it deals entirely with the chemical nature and physiological effects of copper fungicides, based upon laboratory research and extensive trials at the experimental fruit grounds at Woburn. Compounds of copper still occupy the premier position as effective fungicides at the disposal of fruit growers. As the authors point out, a fungicide, to be effective, must be soluble in water, else it could never succeed in passing through the vegetable cell wall and so reach the living protoplasm of either the root plant or the attacking fungus. If the copper preparation is already soluble it is too easily washed off with rain; therefore, the most effective are those that are insoluble when applied and slowly become soluble through the action of atmospheric moisture and carbonic acid gas. Copper sulphate used alone is soluble, but when made up as in Bordeaux mixture and copper carbonate, or as in Soda Bordeaux, we get a practically insoluble material, and hence increase its value as a spray. Bordeaux mixture, as all practical men know, is made up of copper sulphate and lime. When these two substances are brought together in solution in water certain complicated chemical actions take place resulting in the formation of various new chemical compounds, the characters of which depend upon the relative proportions of the two substances used. The art of making a high-grade fungicide depends upon knowing the exact relative quantities to use, as the more lime we use the greater is the risk of forming copper compounds that will resist conversion into soluble products through atmospheric agency. A mixture containing what the authors be-

lieve to be the right proportion of copper sulphate and lime, and known as the Woburn Bordeaux, is made up as follows:—

	Ordinary or Normal	Weak Bordeaux
Copper sulphate	2 oz.	1 oz.
Lime-water	13½ pints	6½ pints
Water (soft) to make up to	9½ galls.	9½ galls.

It is claimed that Bordeaux made up according to this formula has greater efficiency than the ordinary Bordeaux, greater by at least 12 to 1. The author's working in association with the firm of Walter Voss & Co., Ltd., have produced, and now place on the market

a Bordeaux of similar efficiency to the Woburn formula, but in the form of a paste, which simply requires to be mixed with water at the rate of 15 lbs. to 100 gallons of soft water to produce the highest grade fungicide, and it is stated at a cost considerably below the cost of the materials for a similarly efficient quantity of ordinary Bordeaux mixture, and without the trouble of making it. A considerable portion of the report is taken up in recording experiments upon the scorching and fungicidal action of copper compounds, and the conclusion arrived at is "that no direct fungicidal action is possible without the risk, and, indeed, almost the certainty of some damage to the plant," and that, therefore, scorching to some



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LAVATERA SPLENDENS ROSEA

Mackey

extent is a necessary evil in spraying.

"POPULAR BULB CULTURE." By W. D. Drury. London: L. Upcott Gill. Third edition revised and enlarged. 1s. The subtitle of this attractive little manual—a handy guide to the successful culture of bulbous plants both in the open and under glass—indicates its scope and character. It is essentially a handbook for amateurs, and any possessor of a small garden wishful to know something about the kinds of bulbous plants available for use in such gardens, as well as to learn how to set about growing them, will find this little work extremely useful and interesting. The plants are arranged alphabetically according to genera. The book consists of 123 pages and contains 84 illustrations.

* Eleventh Report of the Woburn Experimental Fruit Farm. The Duke of Bedford and Spencer U. Pickering. London: The Amalgamated Press, Ltd. 4s. 3d., post free.

WORKS OF REFERENCE FOR 1910.—WHO'S WHO. 10s. WHO'S WHO YEAR BOOK. 1s. ENGLISH-WOMAN'S YEAR BOOK. 2s. 6d. THE WRITERS' AND ARTISTS' YEAR BOOK. 1s. London: Adam and Charles Black.

"WHO'S WHO" consists of 2,161 pages of brief biographies, addresses, &c., of present day men and women in Great Britain and Ireland. This well known annual has now become an indispensable reference book to every one interested in public affairs.

"WHO'S WHO YEAR BOOK" is not only supplementary to the larger volume but useful as an alphabetical guide to the official positions occupied by public men.

"THE ENGLISH-WOMAN'S YEAR BOOK" should prove extremely useful, containing as it does an enormous mass of information upon subjects of present day interest to women. There is an excellent article on the subject of gardening for women, and sound advice given to those who wish to take up horticulture as a pursuit. Particulars are given of fourteen gardening schools for young women in England and one in Scotland. The only place apparently in Ireland where a young woman at present can get instruction in practical gardening is at the Botanic Gardens, Glasnevin, but there the number is limited to two pupils. There is some confusion as to the activities of the Royal Horticultural Society of Ireland and the Department of Agriculture that might be set right in future editions.

"THE WRITERS' AND ARTISTS' YEAR BOOK."—This is a very valuable storehouse of information for intending journalists. It gives a list of journals (English

and American), with details as to the character of their contents, rates of payment, and other particulars. It also gives lists of publishers, literary agencies, &c. A book both interesting and useful.

Catalogues.

MACKEY'S GARDEN MANUAL, 1910, described as a "Guide to the Best Vegetables and Flowers for Irish Gardens," is a large-paged (demy quarto) publication running to 80 pages. It is most beautifully printed in large type in double columns, and lavishly illustrated with half-tone blocks from original photographs made specially for this catalogue. Every genus is referred to its botanical natural family, is briefly described, and its cultural peculiarities noted. A specimen of one of the smaller illustrations is here reproduced. The interest of the publication lies in the fact that it is an entirely Irish production. The engravings were made by the Irish Photo Engraving Company, and the printing done at John Falconer's printing-house. The effort challenges comparison with any similar



ONE OF MESSRS. WEBBS' 1910 NOVELTIES, THE NEW CARMINE GEM ESCHSCHOLTZIA.

trade catalogue published in the British Isles. Our own opinion is that for quality of matter, simplicity of arrangement, typography, and general style of turn out, it is the best and most pleasing garden catalogue published. No one interested in a garden should fail to obtain a copy of this up-to-date manual.

WEBBS' CATALOGUE OF GARDEN SEEDS FOR 1910. Wordsley, Stourbridge.—This large-paged catalogue runs to over 150 pages and deals with all classes of seeds that are likely to be required by gardeners. Brief cultural directions are freely given, while many

special varieties and strains, the result of careful selection by this celebrated firm's own experts, are listed and described. The book is lavishly illustrated, the large pages giving free scope for effective display. Through the courtesy of Messrs. Webb we are able to reproduce one of the smaller illustrations—a new earmine gem *Eschscholtzia* showing its peculiar charm as a cut flower.

The Month's Work.

Flower Garden and Pleasure Grounds.

By E. KNOWLDIN, F.R.H.S.

WHAT with thawing and freezing, and freezing and thawing, and all sorts and conditions of soil saturation between, a glance at the flower garden is pretty well sufficient. Yet, where we see, as recently seen, the shaky state of the frost-lifted wallflowers massed in beds, the first opportunity of a dry surface for firming them in should not be neglected. This must be done by hand where the May-flowering tulips are planted between, but where beds are wholly given up to the wallflowers one may carefully negotiate the whole with the feet, and the wobblers like it. So do all else in fact, when partly lifted by frost, including aubretias, silene, saponaria, and violas. Speaking of violas, we are aware that in not a few gardens they do not now occupy a prominent position in the spring-beding, being scarcely at their best, and the earliest flowering ones at that, ere the lot must perforce be cleared for the summer crop. Yet late autumn propagation by cuttings affords violas which can be made to play their own part in summer gaiety either as borderings or as a ground work for bigger plantings. Everybody knows that, of course, but we want to put in a plea for the viola, as we cannot but think its capabilities in the hands of the florist are far from exhausted. Our first acquaintance with the viola brings up the memory of one, *stricta azurea*, lavender blue, long lost sight of, yet to memory dear, which owing to its never-producing seeds flowered the whole season through—from spring till late autumn, and if we could only get a race of the *stricta* type in various colours they would be of incalculable advantage to summer bedding. It is, we feel, rather a far cry to summer, but after all, and apart from comparative lateness for the spring garden, with a wealth of colour spring provides in the aubretias, *alyssum saxatile*, the early Dutch tulips, and a host of things, violas are scarcely wanted for that, and to sum up the flower-garden part of our programme for this month there is little to be done. Some, indeed, will say there is little can be done at present in any direction within the confines of our heading, but there is a little in most places, and that little if not done now is very probably not done at all. This in allusion to the pleasure-ground.

Having at last reached the main object of this month's dissertation, which is the trees, there is less need of an apology for tackling them than there is, perhaps, of pointing to the importance of giving them that consideration they surely deserve. Yet, there is need of it; we see the need

daily, monthly, yearly, and those places where the simple but necessary attentions are paid to them are the exceptions rather than the rule. To point a moral: it may be mentioned when visiting an excellent garden where all was exceedingly well done we very diplomatically drew up the neglected trees to have them very summarily dismissed by the chief-in-charge with the obvious statement, "they were there before me and will be there after me," which we interpreted they were there before he came to the place, and the same neglect would be carried forward with compound interest, and one could almost imagine the luxuriant ivy was smiling in its handgrips with a whole line of trees forming the boundary of the otherwise well-kept place at the observation. But what a difference it all makes when master and man, as tree-lovers, view the subject single-eyed, and knowing what should be done have the energy to do it.

Where the legacy of neglect handed down by a past generation, as shown in twin trunks springing from ten, twenty or thirty feet up, or whatever it may be, and each ever growing away from the vertical line of safety as exemplified in the straight single trunk, much may be done to avoid disaster by lightening the heavy overhanging branches on either side. Needless to say, where such bifurcation occurs corrective measures should have been taken in the tree's youth to train it, in the way it should go, of a single trunk. This, of course applies to all trees but it is chiefly amongst the deciduous kinds, our oaks, elms, beech, and ash, that the sins of omission are in evidence, whether we regard our noble trees from the sentimental or commercial point of view—as ornaments, or as timber, and the most sensible point of view, perhaps, includes both the same principle rules. When it is necessary to remove heavy overhanging limbs the more they diverge from the vertical to the horizontal the greater care will be taken to avoid splitting, and besides the safeguarding by a good undercut in the first instance it is often necessary to rope them from above. It is not good in this heavy pruning of middle aged specimens to leave what is termed a snag—two or three feet at the junction—the better way being to cut in as close as possible, all amputations being clean pared and then pointed to prevent the ingress of fungus-spores. Personally, we prefer the paint to tar, provided it is good, thick white-lead paint sufficiently toned down with black to approach the natural colour of the bark.

With "tall, ancestral trees" which have seen generations come and go and possibly with a little attention will do so yet, the first and outward visible signs of decay in the way of water-holding cavities at the spring of the branches, forked trunks, or elsewhere, should be stopped at once. We have done this tree surgery on a pretty large scale, in one case the cavity formed by a long-ago split off limb in a superb beech taking a whole barrowload of brickbats to fill, over which Portland cement was plastered. The face when finished being some thirty inches long by two feet at the widest part. Nature was not quite satisfied, however, for year by year the bark stole over the masonry till it was all enclosed and we have often wondered what the cross-cut sawmen will say when they get *their* teeth into it, ever they do. Many an ancient elm might be spared for

long enough if rather severe measures were taken to reduce the head, a sacrifice no doubt, but of two evils it is the least. If nothing else was done to aged specimen trees the clean pruning out of any small dead wood which often exists seems of decided advantage to them apart from improved appearance. Not a few of our evergreen coniferous trees of the pine, fir, cypress, and cedar families when attaining to anything up to thirty or more feet in height are apt to get scraggy at the bottom and frequently when the bottom tier of branches is *not* failing these branches are apt to become an eyesore to us and suggest discomfort to themselves when bedraggling the grass or gravel. There need be no hesitation in removing these, for when done, the tier above will, in the course of a couple of years, take a droop earthwards, sufficiently so to have them just as they should be. Some of the conifers are apt to form two or more leaders when anything up to fifty feet high, generally caused by the loss of the legitimate leader and that possibly from heavy birds settling on it during the more brittle stage of a season's growth. We once had *picca grandis* showing three leaders at about fifty feet in height and could only manage to get rid of the superfluous twain by the aid of an expert rifle-shot. It is now at this dull season opportunities are afforded for these necessary attentions to trees. Apart from this, on the minor scale the cutting down of scraggy laurels for the purpose of rejuvenation may be contemplated. The best method of doing this is to cut to within, at least, six inches of the ground but, and it is rather a big but, that is to be done when the hardship of Winter is past, and to those contemplating doing it at the immediate present we should say, and say decidedly, Don't.

The Fruit Grounds.

By A. BARKER, Carrigoran, Newmarket-on-Fergus,
Co. Clare.

AHAPPY and prosperous new year to fruit growers all, great or small! With the commencement of the new year a determination must be made (and kept) to push on to a conclusion many important details of hardy fruit growing out-doors, which may have been left over from the past year (a year which will long recall pleasant memories of the splendid crops of all hardy fruits).

Pruning seems to be unusually backward this season, owing to unfavourable weather principally. This matter must be attended to on all possible opportunities, and especially in case of trees which may require spraying to destroy lichens, insect or fungoid pests; when such trees are pruned they can be sprayed on the first appearance of a good, dry day or two.

The training and nailing up of fruit trees on walls must also be promptly finished off, and wherever pear scab made its appearance last year the trees should be sprayed to prevent a recurrence again this year. Plums and cherries are more troubled with aphids than any other pests, these may be dealt with later on.

Special attention should be paid to trees requiring spraying; in the pruning of these be careful to cut clean away all wood showing signs of decay or disease, and all weakly spurs and shoots; long over-grown

spurs may also be sawed or cut out, leaving about two inches of base to be formed into a future fruiting spur.

Young fruit trees which are unfruitful through making too much wood growth, may still be quite safely lifted throughout this month at any time when the ground is in fairly dry condition, and replanted in same position (or removed to some other part of garden if desired). This operation if carefully carried out will certainly check the superfluous production of wood, and cause the tree to produce a good supply of fruit buds. Before replanting the tree cut back any strong fibreless roots to about 18 inches from the stem of the tree, and other roots must have the damaged ends removed with a knife or sharp secateur; be careful not to get the tree too deeply planted, a covering of two or three inches of earth over uppermost roots is quite sufficient in ordinarily heavy soils, a little more in sandy or light soils must be allowed. Providing that the soil is in fairly good condition no manure need be added in course of replanting, a little mortar rubble, and a sprinkling of basic slag would prove very beneficial in heavy soils, but if the soil is poor and light a few forks of good, well-decayed manure will be of considerable assistance in securing good, plump fruit buds for the ensuing year, these trees must be made quite secure against loosening of roots by wind, either by staking, or treading firmly. Care must be taken to give the trees a good mulch of litter or half-decayed manure about end of February, or on the first appearance of dry weather. Sickly or diseased trees would be better uprooted and burnt replacing them with a good, strong fruiting tree procured from a nurseryman, though much may be done to restore unhealthy trees by lifting, and especially so where they are too deeply planted in poor or heavy and retentive soils.

Planting of new trees where not already finished had better be deferred to end of this month, or early in February, when first favourable opportunity must be availed of to complete this operation.

Anyone desirous of planting new trees may still quite safely do so up to end of February (or 1st week in March), but the ground for this late planting must be immediately prepared by deep digging or trenching, adding more or less manure according to condition of the soil. The trees if not already in hand, should be purchased at once. On arrival from nursery they may be securely heeled in on spare ground ready to plant in permanent positions at end of this month, or as soon as ground is in good planting condition in February.

SPRAYING.—Where apple and pear scab has been prevalent during past season, or where trees are infested with woolly aphids, &c., winter spraying is an absolute necessity to ensuring good, clean fruit and healthy trees. Where there is even a suspicion of any of above enemies spray your trees in due season, and you will not be aggravated by the appearance of these pests at a time when they cannot be so readily dealt with. In case of large old trees where moss and lichens often abound, or where there is much loose scaly bark, brush over the largest branches and stems of trees with a stiff, hard brush to remove the moss, &c., previous to spraying, by so doing, the spraying is rendered much

more effectual, and a great saving in spraying compound is effected. This spraying may be done on first favourable opportunity, or any time before the buds begin to swell.

There is now many reliable spraying compounds advertised and several makes of spraying machines to select from so that there is no reasonable excuse for neglecting this operation. In cases where the number of trees to be sprayed, &c., does not justify the purchase of a spraying machine, one may readily be hired at a small cost, and in many localities the Board of Agriculture Instructors have machines which they may lend at their discretion, I believe.

For the benefit of those who may be doubtful as to what compound to select, or who may prefer to mix their own, the following is a mixture which may be safely used on all fruit trees this month or next. (Do not allow this mixture to fall in any quantity on flowering plants or vegetables that may be growing within reach of fruit trees, or injury to plants may result.) To make ten gallons, $1\frac{1}{2}$ lbs. sulphate of copper, $\frac{1}{2}$ lb. of quicklime, 2 lbs. caustic soda, 98 per cent., 5 pints best paraffin oil. First place the sulphate of copper in a small, coarse bag (or tie up in a piece of canvas), and drop into 9 gallons of water in a suitable tub (wooden), slake the lumps of lime in a little water, then add more water to make milk of lime, strain this into sulphate of copper, add the paraffin oil and stir all well up with a flat piece of wood, afterwards add the caustic soda. Keep the mixture stirred up while using, and let the man using the mixture rub a little vaseline over his hands, or wear India rubber gloves. A long canvas jacket or an old overcoat is useful to wear over the clothes while using the mixture.

Proceed with the digging of fruit tree borders or plots yet unfinished. As a rule all established fruit trees in bearing condition are benefited by lightly digging in around them more or less good, well-decayed farm-yard manure. A dressing of basic slag before digging is commenced is a beneficial addition. The slag may be sown or spread over the ground at the rate of about $\frac{1}{2}$ lb. to the super square yard (more would not be harmful). A good way of applying is to weigh out the slag for a border or square, mix with a quantity of fairly dry fine earth, and spread broadcast over the ground under the trees. The slag is especially useful if (as often happens) a good supply of farm-yard manure is not available for this purpose. Slag is a cheap fertiliser, easily applied, and beneficial to all kinds of hardy fruit. The best possible brand must be procured, as beneficial results from the use of indifferent slag would be practically nil. If it is known, or even suspected, that the soil is deficient of lime a little old mortar rubble or a sprinkling of slaked lime is advisable, and especially so for cherries and plums.

RASPBERRIES.—If the old canes have been removed, the new ones neatly and securely tied to wires or stakes, hoe and clean the square, then give the whole square a dressing of basic slag, and apply liberal mulch of rich, half-decayed farm-yard manure down each side of rows of canes, at least a foot wide on each side of canes. Do not cut or shorten the young canes until danger from severe frost is past.

STRAWBERRY PLOTS.—If the plants are not already cleared of dead and dying leaves get this done as quickly as possible, and the ground cleared of weeds so that a liberal mulch of rich, half-decayed farm-yard manure may be wheeled on to the plots during frosty weather or as soon as the ground is fairly dry (failing either condition lay a few planks down to wheel on). If possible to give the squares a couple of waterings with liquid manure previous to mulching so much the better. For this mulching procure the very best manure possible, and give the whole of ground right up to collar of plants a mulching two or three inches thick. Manure from houses where stall-fed cattle or highly-fed milch cows are kept is the best for this purpose. It must be thrown into a heap, and once or twice turned previous to use being careful not to allow it to heat in the heap.

BUSH FRUIT PLOTS. If the bushes are already pruned then no time should be lost in getting the ground forked or dug over. With black, red, and white currants the surface soil may be removed with a fork or rake for a distance of a foot or more all round stem of bush until roots are met with, over these place a dressing of rich, well-decayed manure, covering it over with two or three inches of clean earth as the digging proceeds. Take advantage of spaces between the trees where there is not many roots to dig more deeply, and bury weeds or all leaves and rubbish that may be lying about the ground. If there is any suspicion of the black currant mite, closely examine the bushes before digging is commenced. If the mite be found only on occasional shoots cut out these shoots, carry them straight away to a fire and burn them, if the bush is badly infested uproot the whole bush and burn it immediately. It is a good practice (specially in localities where the mite exists) to put in a couple of dozen or more good, strong, clean shoots of black currants annually to form a reserve of fruiting bushes ready to replace such as may have to be destroyed. Obtain the variety Boskoop giant (true) for this purpose, it is a most desirable variety. Gooseberries will continue to produce satisfactory crops with much less feeding than currants. If they receive a dressing of manure every second or third year, that is generally sufficient for their needs, though an annual dressing of slag broadcast over the whole square will be found beneficial. The dressing of slag is equally beneficial on the currant plots. Don't forget the birds on the gooseberry plots, as here it is a case of saving ourselves from "our friends" as well as our enemies. Bullfinches, tom tits, and sparrows are all very partial to gooseberry buds, and will also clear red currants of buds at times. Late pruning is often put forward as a means of securing a crop of gooseberries where birds are troublesome. Without adopting such drastic methods as shooting or poisoning, I think there are two remedies against this evil—*i.e.*, either put wire netting about the squares or prune and clean out the bushes early in the year. I generally adopt the latter. Get the trees pruned early in the season and have the ground dug over as early as possible. In a thick unpruned tree birds can perch comfortably on the branches and eat to satisfaction. There is also a great amount of shade and protection

for birds, which is minus [in a well pruned bush, which should resemble a collection of nearly upright cordons, well set with buds, but affording scanty foothold or shelter for birds, and I find the birds rarely attack the buds under such conditions.

The Vegetable Garden.

By WILLIAM TYNDALL, County Horticultural Instructor, Kildare.

DURING the year 1910 in writing the month's work in the vegetable garden I shall have chiefly in view the wants of the amateur and cottager, for all who possess a garden may make it a source of agreeable and healthful occupation by taking an interest in the working of it.

SOIL.—In the growing of good vegetables it is essential that there should be a thorough preparation of the soil, and how few working it know its origin and nature. Soil is a mixture of mineral products—animal and vegetable remains forming and collecting from remote ages. It is nature's great storehouse of food to meet the wants of the world. The easiest way to secure for the soil the condition that best suits the need of plants is to cultivate it deeply, for many advantages attend deep digging. Labour is well employed in stirring the soil deeply in winter and early spring, using as much manure as you can spare, remembering always to leave the soil rough so that it may be improved in texture by the action of the weather. Recollect if soils are wet they must be drained or most of the manure applied to them will be wasted, for manure cannot be used by the roots of plants in the absence of air.

SEED.—The seed is a very important factor in good vegetable growing, and the selection of the best types is of the utmost importance. During the past few years a very large number of horticultural societies have been started over Ireland, and thereby many cottagers and amateur gardeners are taking a much keener interest in the production of high-class vegetables than formerly, and good results cannot be expected from inferior strains of seed. Catalogues are now arriving, and the seed order must receive early attention.

On account of the very severe weather during November and December much of the trenching, digging, and other garden work is in arrear, and must be pushed on as fast as the weather will allow, more especially where such crops as onions, parsnips, and carrots are to be grown. Manure the ground as the work proceeds, as from now onwards each month will bring as much if not more work than can be properly done. In all gardens rotation of vegetable crops should receive more attention than is given to it at present, for if the same kind of vegetable be grown on the same ground for several years it is liable to exhaust the soil of one or more of the plant foods which it contains unless very heavy manuring and probably also liming the ground is done yearly as for onions, when that crop improves instead of deteriorates.

Where heat can be utilised either from pipes or hot-beds many kinds of seeds will require to be sown in January, if really high-class produce for home use or exhibition is desired. Sow in boxes onion seed, Ailsa Craig

Jeek, International, Tomato Winter Cheer or Sunrise, Cauliflower, Snowball or Dwarf Erfurt, Lettuce, Early Paris Market and Pearl, giving a temperature of 50 to 60 degrees, with bottom heat if same can be given. In a cooler house or frame early peas may be sown, Multiple and William I, being good early 3 feet high peas. Useful sized boxes for raising all the small seeds mentioned, and for transplanting afterwards would be two feet long, fifteen inches wide, and four or five inches deep, leaving space between the bottom boards for the water to escape, put broken crocks or cinders in the bottom, and cover with leaves or moss, filling the boxes with soil, &c., as follows:—loam two parts, leaf-mould one part, decayed horse manure, as from a mushroom bed, one part, and enough sand to keep the whole porous; mix thoroughly, and pass the whole compost through a quarter inch riddle before filling the boxes for seed, sowing which should be done thinly, pressing the seed firmly down, and covering lightly, giving the soil a good watering after sowing the seed. Cover the boxes over with paper or muffled glass to keep light from the seeds till they germinate, when it should be removed. Once the seeds are up give air when the weather is mild and favourable.

PEAS can be sown in narrow boxes $2\frac{1}{2}$ feet long and 1 foot wide and 8 inches high, using a compost made up of loam two parts, and leaf mould and decayed horse manure one part each, make firm. Use the same mixture for filling 7 inch pots for French beans. Syon House and Earliest of All are good varieties to sow. Give a temperature of at least 60 degrees with some bottom heat, and give a little water till seedlings are up.

CUCUMBER SEED for an early crop should also be sown in pots plunging in a bottom heat of about 70 degrees, if soil is moist little water will be required till plants are up. Early in the year some care is required in airing and watering so as not to give the plants a chill.

If not already done, box seed potatoes for growing on hotbeds and put the boxes in a house having a temperature of 60 to 70 degrees, and syringe to keep moist. Select medium sized tubers, and don't cut but stand them in boxes on their ends, and when growth well starts rub out all sprouts but one, or at most two. Hotbeds that are now made up for the forcing of such vegetables as potatoes, radish, carrots, &c., will require more material (leaves and manure) than later on in the year when the days lengthen. Equal parts of leaves and stable manure give a steady lasting heat, more especially if prepared before hand by turning two or three times till the violent heat is given off, but never let it lie so long before turning as to get burnt white in the centre or the heat will not remain long in the bed when made up.

SEAKALE.—This is a very easily forced vegetable and is often spoiled by being grown too rapidly in strong heat. Formerly this vegetable was mostly forced where grown in the open, first covering the crowns with screened ashes or pots and then putting a couple of feet deep of leaves and stable manure prepared as recommended for hotbeds over the ashes or pots. Now seakale is mostly lifted and put in boxes or pots placed in a warm forcing house and the crowns kept covered to exclude light. When lifting the crowns secure the cuttings for planting out next April to keep

up the supply, cutting any roots the thickness of your finger into lengths of six inches, tie in bundles and place in boxes of fine soil in a frame or cool house.

RHUBARB will force much more easily now than in December, and as the supply of cooking apples gets small it becomes valuable. Like sea-kale it can be forced where growing in the ground by covering with barrels and boxes and surrounding with leaves and stable manure to give heat, they may be lifted and brought into a warm house and kept dark where the crowns start quickly.

French Gardening.

AT the annual meeting of the Women's Agricultural and Horticultural International Union, Mr. Thomas Smith, of the Fels Gardens, in Essex, gave an instructive paper on the commercial outlook of the French system of gardening as practised in England, with particular reference to the methods adopted in the gardens of which Mr. Smith is the manager. In the course of his address he pointed out—

That whereas this system of cultivation has long been in use for certain crops, or at certain seasons, in some private gardens in England, it is only recently that it has been adopted for market purposes. Very exaggerated and misleading accounts of its results had been put forth in some quarters, which led to many persons taking it up under mistaken notions, and meeting only with disappointment and failure.

In spite of this the system opens up wide possibilities if the limitations are also understood. While in many English gardens it is in use only at times, the French pursue it all the year round. From six to eight, and even ten crops per annum are often produced from small plots of ground. This successful result is not dependent upon climate or soil, but on method. It is true that the soil of many of these French gardens now consists of a layer, one foot deep, of light, rich compost made by the slow decay of manures applied regularly for years. In fact, this is so well recognised that it is usual for the tenant of such gardens to stipulate on leaving them that they may remove this soil.

Low stone walls are erected to protect from the cold winds, and cloches and mats used when necessary, but not in the summer when the culture is entirely in the open. The most important point is to never let the crops receive a check, they must always be kept growing. This is secured not only by the light, rich soil and constant protection, but by ample waterings. Not mere dribblets given when the weather is dry, but thorough, regular soakings, given as constantly as food is given to animals. Slight rainfalls are disregarded.

Forcing in summer is kept up quite as regularly as in winter. To grow a little of everything is right where good all-round gardening is required, but the French system means specialising and can only be made successful where crops are chosen which work well together. The French grow scarcely anything but

saladings, and melons and cucumbers. These two last are generally used to fill the frames in the late summer and early autumn, being followed again immediately with salads as soon as cleared off. Cloches are often used on only one quarter of the whole garden, but that plot will be counted on to give the largest profit. It is a matter of conjecture how this system first developed; no doubt some one man was struck with the idea that he could get early crops in such a manner and he probably experimented a little and succeeded so far as to make others copy him. At any rate it has now been carried on for several generations. Similar attempts here must follow the same method. The essentials are;—(a) well-drained soil; (b) pure air; (c) sunny aspect; (d) cheap manure supply; (e) unlimited supply and good water; (f) vicinity of a good market or a station on a main line.

In remote places it cannot answer. The cost of manure and carriage needs careful consideration. The two difficulties that may arise in the future are the decrease of stable manure as motors increase; or possible over-production. When the conditions described are fulfilled we must see what can be done by this system.

The too-enthusiastic writers of whom we spoke earlier were often led astray by mistaking *returns for profits*. They hold forth the alluring prospect of making £600 per acre. As a matter of fact, £850 has been made—or rather a certain plot has been specially worked to bring in a profit at that rate. Of course this sounds very attractive, but general facts are these—often if you get £600 per acre it has cost £590 to earn it!

The Parisian gardener calculates that this system must be worked three or four years before any opinion can be formed of the rate of profit obtainable. The Fels Gardens showed a return the first year of £725 4s. 6d. per acre, but the outlay had been £714 15s. 6d.

Those entering on this plan of gardening must be prepared to wait three or four years for profit, and then if they can average £50 to £60 per acre they may think they have done very well.

As a rule uncertainties of weather are of less account in this way of culture than others, but in such a season as that just passed through crops raised on the French system suffered more or less.

Lastly, it should be clearly understood that training is absolutely necessary for gardeners on this method.

The subsequent discussion turned largely on manure, several speakers describing the difficulty already existing in their neighbourhood of procuring stable manure. Questions put to Mr. Smith elicited some valuable information on this score. He said that last year he used 1,500 tons of stable manure on two acres of ground; this coming year he should use 2,000. No road scrapings nor any form of short manure are of use; long straw manure is essential.

In one case where an insufficient supply of this was a hindrance the experiment was made of using half of stable manure and half good leaf mould out of a wood. The result was surprisingly good.

Celery was a very paying crop, came in remarkably early and sold well, averaging 1s. per dozen at Covent Garden. Asparagus can be forced in this way, but is a slow and costly business, only to be achieved where profits can be waited for.

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violet, fixed; George Stark (7), waved scarlet; Helen Lewis
(25), John Ingman (25), Mrs. A. Ireland (12), Mrs. Henry Bell (25),
Paradise Ivory (25), Tennant Spencer (12).

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IRISH GARDENING

VOLUME V.
No. 48

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

FEBRUARY
1910

The Labourers (Ireland) Act:

ITS ADMINISTRATION WITH RESPECT TO GARDENS

WITH respect to the application of portion of the Ireland Development Grant to providing labourers' cottages and land for gardening purposes, it is to be greatly feared that, so far as the land is concerned, a great opportunity is being lost through apathy or want of knowledge on the part of the occupiers. We are inclined to believe that the present condition of the land attached to the vast majority of cottages erected throughout the country is mainly due to the latter cause—namely, the inability of the labourer to appreciate the real capabilities of even such a small piece of ground as half an acre. It is indeed a great boon to the labourer to have a sanitary dwelling for himself and family, and to be provided with the opportunity of raising sufficient vegetables, and even fruit, to supply his table all the year round, not to mention the possibilities of surrounding his home with a setting of beautiful flowers that would be a joy not only to himself but to all passers-by. The material advantage of a well-stocked garden is too obvious to dwell upon, while the effort to keep it so and the interest in and appreciation of the results have a mental and moral influence that cannot be overlooked in reckoning up the possible total good obtainable by the present-day labourer in Ireland. Governments, however, may pass beneficent Acts of Parliament and county councils may build cottages and bestow land, but unless the labourer himself utilises the opportunity and extracts from the land the wealth that is there for the finding, it seems to be a case of much cry and little wool so far as the real welfare of the rural population is concerned.

But is the labourer to blame in this matter? We hardly think so. A labourer is not a gardener. He may know how to grow potatoes

in lazy beds and to plant a few cabbages, but he does not know, and cannot in the present state of horticulture in Ireland, be expected to know, the intricacies of rotation and all the rich possibilities of intensive cultivation of the land. This he must learn before he can reap the advantages that may be secured by the possession of a garden. But is the labourer given an opportunity to learn? If not, the Labourers (Ireland) Act is by just so much a barren and worthless measure. Fortunately, however, this important link is not missing in the chain of rural development in Ireland, as there is established in each of our 32 counties a public body (the Technical Instruction Committee of the County Councils) charged, amongst other things, with this very duty, the education of the labourer in matters dealing with the cultivation of the land, and especially in cottage and allotment gardening. When county councils spend public money in building labourers' cottages and buying land to provide allotments, it is surely their plain duty not to stop there and to smugly lay the flattering unction to their souls that they have done their duty. Let us see, for example, what our council in the metropolitan county of Dublin is doing in this connection. They are covering the county with groups of labourers' cottages with attached allotments of half an acre of ground or more. How are these allotments cultivated? Let any one interested in the matter cycle or drive round and see. The sight is a truly pathetic one, and is a standing disgrace to the administration of the Act. It is almost unbelievable that the premier county council of Ireland so far fails the labourer that it persistently refuses to spend a penny piece towards instruction in gardening in any part of the county. Is there

not one member of the council who recognises this public duty and who is spirited enough to insist upon at least the appointment of a Horticultural Instructor who would visit these allotments and show the labourers how to make the best use of their little plot of land? There may be other counties just as bad in this respect as Dublin, but none could possibly be worse, and furthermore it is the example of faulty administration that lies nearest to our own door.

With such thoughts as these in our mind we wrote to Mr. Charles Wakely, the Horticultural Organiser for the County of Essex, with whose splendid work in the organisation of workmen's allotments in that county we have been long familiar. We asked him to tell us from his wide experience what possibilities lay in these half-acre plots under the control of so many of our labourers. Mr. Wakely replies as follows:—

You tell me, and it interests me greatly to know, that a large number of labourers in Ireland have now as much as half an acre of land attached to their cottages with a view to the development of profitable gardens. I exclaim—"What a grand opportunity and what possibilities are thus opened up!"

I write as one who has long observed and encouraged the efforts of those who have taken in hand the cultivation of ground of all kinds. Neglected plots of land have often been made to yield a heavy return to interested workers who have thoroughly applied themselves to the subject. About half a mile from my house I have recently watched two capital examples of this sort. On one side of the railway a deserted brickfield has been gradually levelled and made into gardens. A more unpromising site it would be difficult to find, and possibly some "professional" gardeners have smiled at the efforts made. But results are gradually increasing, and a pretty constant supply of fresh vegetables is now being gathered.

On the opposite side of the railway a mixture of rubbish heaps and soil from the foundations of a large factory has served a similar purpose. Here again the conditions were indeed difficult, but keen application to the work is once more proving itself to be the chief requisite for success.

When writing of the culture of special classes of plants it is the custom to recommend particular soils in each case, but my present object is to encourage anyone having a bit of land of any sort to make an effort to improve it, and to reap a satisfactory return from it. It must, indeed, be a strange piece of ground that admits of no improvement!

My first suggestion is that special attention should be given to good spade work, in suitable weather. Specially avoid working the ground into a pasty condition. Autumn cultivation usually proves very helpful in this connection, as this gives an opportunity for frost and air to do their work of opening and mellowing

the soil. It is more than ever clear to-day that this work is profitable, as it serves to bring about healthy conditions for the roots. Good, deep cultivation may be old-fashioned, but it stands out in 1910 more fully justified by results than ever before.

Manuring naturally claims attention, and at first the value of a bulky manure such as that from the farmyard should be borne in mind, on account of its help in working the soil. Almost anything that will rot down will in time prove useful. Perennial weeds, hedge-clippings, &c., should be burnt, as well as anything likely to carry on disease. The ashes from such fires are simply invaluable as a manure. The value of the pig should be borne in mind, both in view of the disposal of waste vegetables and of the provision of manure. Do not use the latter in too fresh a condition. The profitable use of "artificial" manures is now receiving more attention from small holders, who are getting great assistance from them. Pay special attention to the preparation of good seed beds, as this means much in a new garden. Remember that it pays to buy good seeds. Study the state of the soil in view of sowing, rather than make too much of the almanac. Bear in mind the usual amount of growth made by each crop, and allow proper space for development. Through lack of this there has been sad waste in the past.

A variety of circumstances will dictate as to which crop should be prominent. If to be grown for sale, carefully consider your probable market and the produce in demand there. For home use remember that a constant supply of vegetables is most desirable. In this connection give special attention to the cabbage class for winter and spring use.

Fruit bushes and possibly trees will in many cases prove of great value in such a garden. Start with good trees or bushes, avoiding divisions of old ones. Remember that these crops require cultivation as much as vegetables do. The apparently simple practice of hoeing means more to them than many growers yet believe.

The gradual introduction of hardy herbaceous plants and roses, for the supply of cut flowers, is now commonly noted in many gardens, and certainly adds greatly to their interest and value.

A further development is seen in the shape of small frames for the raising of early crops, particularly for planting out as soon as weather allows. This feature in a garden has many reasons to commend it.

It is quite true, as Mr. Wakely suggests, that much depends upon a man's own push and industry, but it is also true that the present advanced condition of allotment gardening in Essex is largely, if not entirely, due to the enlightened policy of a Technical Instruction Committee that has always been in the forefront of educational progress.

If allotment gardening is to advance in this country we must instruct the labourers; there is no other way. Let us begin with the metropolitan county. Gentlemen of the Dublin Co. Council, an Instructor in Horticulture, *please!*

Fuchsia Culture

By K. McLEOD BEATON, Carrigoran, Newmarket-on-Fergus, Co. Clare.

PROPGATION BY CUTTINGS.—The best time for this is in February and March. The plants require a little heat to stimulate them into growth. The best kind of cuttings are the young shoots taken off close to the old wood as soon as they are two inches long. Fill the cutting pots with a compost of loam and leaf-mould in equal parts to within an inch of the top; fill the remaining space with sharp silver sand, make it firm, then put in the cuttings after trimming off the lower leaves; give a gentle watering with a fine rose, and place them in the propagating frame; if not room for them in the frame place hand-glasses over them. The cuttings will soon strike root, and should then be potted off singly into small pots; shade them from the sun for a time, and repot them then into pots two sizes larger. Pot the old plants early in the spring; strong yellow loam, one-half leaf-mould, and well decayed old hot-bed manure, one quarter each, all thoroughly mixed, will form a very suitable compost. It is good practice to have the soil mixed up two or three days before potting. After the greater part of the old soil is shaken off, reduce the roots, and trim in the branches, so as to get the plants into a pyramidal form; pot them firm, and place them in a heat of 55 degrees. Water moderately, and syringe overhead frequently to encourage growth. When the plants are growing freely, weak liquid manure may be applied to advantage. From a 5-inch to an 8-inch pot should make a good shift for young plants. The tops should be nipped off to force out the branches, the object all the time being the pyramidal form. One of

the top shoots should be cut out as soon as the lower shoots have grown a few inches; the other top shoot should be tied to a cane, to be again stopped when it has grown about a foot; proceed in this way till the desired height is attained. If the side-shoots are deficient in number, stop them also, to cause the right number of side shoots to be produced.

As soon as the flowering season is over set them out of doors in the open on a bed of ashes—no ground worms will get into the pots if placed on ashes. When the frost sets in,



Photo. by]

R. Welch

A FUCHSIA HEDGE 18 FEET HIGH SKIRTING A HIGHWAY IN THE WEST OF IRELAND

take the plants under cover, place them under the greenhouse stage, or even in a shed where frost cannot reach them; they will not require any more water till their potting season comes round again.

OPEN BORDER VARIETIES.—Those having the habit of the old *coccinea*, *gracilis*, *globosa*, &c., are all well fitted for flower garden purposes, requiring little or no attention, but cutting them to within a foot of the ground after the first frost. The stools should be covered with ashes or leaf-mould, or any other litter, to exclude frost. Remove the covering in April. If it is desirable to keep such kinds as *coccinea*, &c., as dwarf as possible the plants should be

lifted out of the ground in May and the soil shaken from them before transplanting.

TO INCREASE STOCK.—Good stout cuttings, planted firmly in September or early October in an open frame, will furnish little plants in the following spring. The majority of the hybrids will winter alright in the open garden, and will grow freely in the spring if they are kept from severe frost, and also kept dry. Though they are thus able to endure cold they will also stand a high temperature and a moist atmosphere when growing. Under these circumstances they will grow with great rapidity.

Can Rice be Grown in Ireland?

THERE is a species of rice that grows wild along the muddy shores of eastern North America popularly known as the Canadian wild rice, and whose botanical name is *Zizania aquatica* Linn. It has been used as food for ages by the native Indians, and is said indeed to form their chief means of support. It grows in muddy bottoms where the depth of water does not exceed two or three feet. The plant has been grown in the open air for many seasons past at Kew, and there it forms "a stately grass with stems standing nine to twelve feet above the water when grown in good soil. The narrow, pointed leaves are two to four feet in length, two to two and a half inches wide about the middle, and of a deep vivid green. In full blossom this grass is strikingly handsome, every stem being crowned with a large panicle of flowers one and a half to two and a half feet long and about two thirds as much wide." This brief description of the plant is taken from an interesting article on the Canadian wild rice by Mr. W. J. Bean of the Kew staff, in a recent number of the *Kew Bulletin*. The writer further remarks that "apart from any economic value it may possess in Great Britain this plant is certainly worthy of cultivation for its beauty alone in shallow ponds and ornamental tanks." As long ago as the beginning of the last century Sir Joseph Banks grew and ripened seeds of this species of rice in his garden in Surrey, and a Mr. Lambert, in a paper read before the Linnean Society in 1803, said he was "persuaded that it might be sown with some advantage where no other grain will grow in many shallow pieces of water in Great Britain and Ireland, especially in the latter country."

The Kew authorities, judging from their experience in the cultivation of this wild Canadian rice, thought that it might be worth while attempting to acclimatise it in the most likely places in Great Britain and Ireland. Seeds were imported from Canada, and distributed in considerable quantities to various places throughout the three kingdoms. Samples were sent to Lord Barrymore, Fota, Co. Cork; Earl of Kenmare, Killarney House, Co. Kerry; and to the Marquis of Lansdowne, Deereen, Co. Kerry. According to the authorities at Kew the wet lowlands of Kerry in particular ought to be a suitable locality for the cultivation of this rice. The only fear

seems to be that there may be a lack of sunshine during the ripening period. It is an experiment, however, well worth trying, as if the climatic conditions are favourable it might become a valuable crop in places that are at present unproductive in the matter of valuable food plants. One peculiarity in the cultivation of this cereal is that the seeds must never be allowed to get dry, and must therefore be stored immersed in water.

Roses.

By O'DONEL BROWNE, M.D.

ROSEs, owing to the severe frost we had just before Christmas, have had a terrible gruelling. My poor Tea standards, which took such a lot of work to get, are gone, and will never show me more flowers. It was the night when my thermometer registered 22 degrees of frost that did the havoc. It is, indeed, strange that in the same week I should have met in a patient the highest temperature and in the garden the lowest temperature I have ever recorded in Ireland. Still, if the roses died the patient recovered. Other rosarians have suffered as much as I have, for a brother rosarian was lamenting to me how he had suffered, and what was he to do at pruning time, but I think our pruning has already been done for us. It is only necessary to remove at the points of health the blackened, gangrenous shoots which Mr. Frost has left us. But we must not rest at this, for if on cutting off these blackened rods we find the top of our pruned remains showing a browned centre, frosted pith, we must go lower. Had we only had our standards thatched or their heads protected with ferns, &c., all would have been well; but that week was a rushed week, and my poor roses had to suffer. After all we may have a good spring which will make some amends, and if so let us not be too unthankful. If, as I hear, we are to have a rose show during the first few days of July in Dublin, this late frost has shown us what rods to retain in pruning, for dwarfs having ripened rods are easily recognised, and in pruning use these ripened rods the frost has left us. Personally I fear this early date will not be fair to all. My reason for saying this is that from careful observation I find that my roses are not in their prime until about the 8th of July. I have been wondering how our northern friends—Dr. Hall and Mr. Calvert—are going to have their roses ready, as when my first blooms are over Dr. Hall is generally getting his harvest. How can Mr. Calvert, away up in County Down, be ready with cut-back plants? I pity him having to defend his Cup for the third and, he hopes, the last time. The Dubliners are, or should be, all right, and like the popular song they intend to "share the prizes among the lot"; but "nous verrons," as Mr. Knowldin would say. There are some hard nuts among the Dublin contingent: men hard to beat, good, honest, genial rosarians, and we in the country must work hard to give them a race for those prizes. Some time ago a letter appeared in *IRISH GARDENING* from an exhibitor who wrote about the six bunches in six vases, and if my memory serves me correctly his complaint was that some stands contained no variety of rose save the Polyantha type, whereas other stands had



THE CANADIAN WILD RICE (*ZIZANIA AQUATICA*).

From a photograph of a group of plants growing at the edge of the Lily Pond in the Royal Botanic Gardens, Kew.
(Copied from the *Kew Bulletin*.)

a "mixum gatherum" of Polyantha and ordinary blooms. I waited patiently to see if any of the Council—those members responsible for the wording of the schedule—would reply to his query, but there was no answer, not even from Mr. Knowlton, who generally has an eagle eye and habit of pouncing on most things. I think the Council are wise in leaving the varieties shown to the discretion of the exhibitor himself, as there are very few gardens where on a given day you could cut six good bunches of distinct Polyantha roses. Talking of Polyantha roses brings to my mind a pair fearfully alike in nearly every respect. I refer to "Queen of the Belgians" and "Donna Maria." I had cut two bunches of these roses for our show here in Naas, and was told by an excellent authority that they would be disqualified at the next day's show. I erred on the side of caution, and did not show them both. At luncheon time, after the judging was over, I had Mr. Hugh Dickson down here, and I consulted him, and he clearly showed me a difference. This is not meant as a hint to Mr. K, to look to his judges, so I hope his eagle eye will miss this article. I only want to show my readers how hard rose-judging is, and what a thankless job it is—sometimes. It is all right as long as you are in the tent, but it is quite different when you step outside the tent—out of the frying-pan into the fire! Talking of the frying-pan—by which I mean a tent—why does nobody ever invent a plan of keeping a tent cool? In London the fire-hose is kept going on the roof, but it is no use—only a waste of water. I never could understand why, when there is staging all round the tent, that the sides of the tent should be fixed down to the grass outside. Thin tiffany would be useful, but the cost would not suit. There is no place I would sooner stage roses, of all the places I have met, than in the Royal University or the "gaol" of Naas! Both are cool and have good light—two very important adjuncts in rose-showing.



THE MOST IMPORTANT FACTORS IN ROSE GROWING.—Attention may be drawn to the expert opinion of Dr. Bernard Dyer who carried out exhaustive experiments with soils from famous rose growing districts, under the auspices of the National Rose Society. Dr. Dyer reported that "on the whole I should say that if any part of the special productiveness of these various nurseries in the matter of good roses is to be attributed to natural conditions rather than to the skill of the growers, it would seem that these conditions must be looked for in local climatic influences, aspect, and possibly good, natural drainage, rather than in any special features in the actual composition of the soils themselves." In other words, natural physical conditions are of more importance in rose growing than chemical composition merely affecting the feeding.

THE garden I love has a hedge of box,
That's dimly, darkly green,
But it holds such splendour of moon-white
phlox
Its close-clipp'd bow'rs between,
The sweet-peas tremble on tiptoes light,
All lilac, and pink, and pearl,
To look past the gloom of its dusky height
To the birch-leaves all a-whirl.

Current Topics.

By C. F. BALL, Royal Botanic Gardens, Glasnevin.

THE present winter has been exceptionally severe, for it has been many years since twenty degrees of frost have been registered at Glasnevin. In consequence plant life has suffered considerably; trees, shrubs, and in some localities vegetables have been affected. If severe weather comes in February the losses will be seriously augmented, for many shrubs are now in a weak condition. With the editor's permission, when spring comes it would be interesting to have mortality lists of the newer shrubs and also those that have come through the winter safely. The snow done a good deal of damage by its weight, breaking branches of evergreens. The tabular branches of some coniferae collect the snow, and are especially liable to be broken. A good practice exists in some nurseries, where a man is sent round with a pole to shake off the snow from the choicer specimens. Many amateurs lose plants in frames during severe weather by being too anxious to uncover them. In the London nurseries plants in frames are covered by mats and a thickness of straw, bracken or other material handy sometimes during a frost of two or three weeks and for several days after the thaw, so as to let the thawing be gradual, for sun or strong light is injurious to half-frozen plants. The theory of how plants were injured by frost was that the sap, like water in freezing, contracted until it reached four degrees Centigrade, and then swelled in becoming colder, and turning to ice the swelling burst the cell wall, and in thawing the sap was lost, so the protoplasm died, whereas in a very gradual thaw the sap was partly reabsorbed. This will partly explain why even a few branches will help to save plants, and some plants will come through the winter better on a north than a south wall. Mr. Bedford of Straffan says the only place where he can keep *Escallonia macrantha* alive is on a north wall.

A later theory about the effects of frost is that plants perish from drought. Even during the winter living shoots are giving off water vapour. When the ground is frozen the roots cannot take up water, and so the loss is not made good and the plant dies. If wind happens to come with frost the danger is greater. But these theories are not always applicable, though they may explain some cases. Practically, we know that to save plants not considered quite hardy the method is to mulch heavily with dead leaves, strawy manure or even ashes, and if a bush to work some straw or bracken into the head, and a few evergreen branches.

The Canadian wild rice (*Zizania aquatica*) has been for generations used as food by the North American Indians, and early travellers relate how wild fowl flock in thousands to feed upon the wild rice, and by it "become inexpressibly fat and delicious." It is a strikingly handsome aquatic grass growing from six to twelve feet high, and is worth cultivating in shallow ponds for ornament. If it could be naturalised it would really be valuable; at present facts seem to point that it will only be in milder localities if anywhere. Kew has recently imported a quantity from Canada and distributed it through England, Scotland and South of Ireland. The difficulty is that wild rice is an annual,

and plants raised early in the year under glass and planted out will ripen good seed, but at Kew the self-sown seedlings springing up the next year flower too late to form good seed. At Glasnevin last year it flowered, but was sown too late to ripen good seed.

Mr. T. Smith recommends as a substitute for the Canadian rice our native plant, *Carex pendula*, for those who require a plant to improve duck and other wild fowl shooting. *Carex pendula* is a handsome perennial sedge growing by the waterside, and Mr. T. Smith says that duck will eat the seeds with avidity.

The Berlin Botanica publish a small, well illustrated work on their gardens. The plants are arranged according to their country. One photo of part of the rock garden shows a pretty Pyrenean group consisting of *Ramandia pyrenaica* and *Saxifraga umbrosa*, with *Viola carnuta* at the base. We might well adopt an idea from Germany for our conservatories where plants are grown for ornament and not for collection. The palms and plants are either planted out or plunged, and the ground carpeted with *Sellaginella apoda minor*, giving the idea of tropical shrubs on a lawn.

From Berlin also comes a promising new tree sent out by L. Spath Baumschulenweg, Berlin, at six marks for a small plant. The raiser's description of *Acer pennsylvanicum erythrocladum* is as follows:—"After the leaf-fall the young shoots of this beautiful new plant turn a wonderfully vivid carmine red colour and form even from afar a bright winter ornament."

Like the type, this new variety has the old stem of a slaty colour, streaked with silver, but the young shoots are brighter in winter than the dogwood.

Our old friend *Ampelopsis vitifolia* is having a rough time. But a few years ago the name was changed to *Vitis inconstans*, a name which was never taken up by gardeners, so it is still less likely that they will take up the new name recently given to it. An assistant in the Kew Herbarium now announces that we ought to call *Ampelopsis vitifolia* by the cumbersome and unwieldy name of *Parthenocissus tricuspidata*.

The following incident will show that it pays lady gardeners to study and cultivate other things than their profession—for instance, a winning disposition and an attractive appearance. An employer in Ireland sent her lady gardener to buy some manure at a sale, but when the lady arrived she found the manure was already bought by a certain gentleman. The lady was then

sent by her employer to persuade the purchaser to part with some of the manure. On calling to see about the matter and after a pleasant talk, it was amicably arranged so that each should have half of the manure.

Sweet Peas. By H. J. R. DIGGES.

REPORTS from all sources tell of a disastrous seeding season last year, there being practically only ten days or a fortnight of summer weather altogether. This short spell occurred at the beginning of August, when sweet peas came along with a glorious promise of seed, and hope ran high after the cold and miserable June and July which had retarded growth and made the plants look wilted and unhappy. How splendidly the rows and clumps responded to the sunshine; their pent-up energies burst out into magnificent bloom, germination followed with great abundance, and all fears of a bad season were allayed. But, alas! the sun seemed to have made his last and only effort for the year—cold, dark, sunless days followed without a break, the seed refused to develop or ripen, and a general shortage in the harvest inevitably followed. Seed is scarce, seed is dear, but on the other hand growers are more determined than ever that the seed they are sending out is of the finest quality; they know how serious a matter it would be if a corresponding failure should occur with their clients through a distribution of inferior seed. We may have to pay more for our seeds, but we need not fear that growers will endanger their reputation by sending out indifferent seed, and if the lesser quantity induces us to sow more thinly the scarcity will prove a blessing.

The shortage will be felt most in the newer varieties, and "sold out" will be a frequent reply to our orders. There is all the more need, therefore, to order at once. Happy are they who have anticipated, sending their orders even before catalogues were received and having them filled at once. The gardening newspapers which give special attention to sweet peas prove their usefulness in such an emergency, noting the new varieties, their raisers and their distributors, so that readers are enabled to place their orders before catalogues are issued, and so ensure a supply of seed. The ordinary grower who is not keen on new varieties will have no difficulty in procuring the older and well-tried kinds as before. Stocks of these will hardly be affected, if at all.



THE PENDULOUS CAREX (*Carex Pendula*)

One of the largest of our native sedges, flowering early summer. Its three-cornered fruit is developed from the 3 stigma ovary shown in the figure. (After Bentham.)

It is difficult within the limits allowed to make a selection from the new varieties for this year, but there are some sufficiently distinct from the almost infinite variety of shades and colours hitherto known which stand out prominently amongst the introductions of last year. The National Sweet Pea Society conferred "Awards of Merit" on the following, and it is always safe to follow their recommendation, as it is only given after a very exhaustive trial, viz.: — Clara Curtis, cream (W. J. Unwin); Charles Foster, mauve (R. Bolton); Edrom Beauty, orange (Dobbie); Dazzler, orange scarlet (Breadmore); Mrs. W. J. Unwin, orange-scarlet, striped on white (W. J. Unwin); Sunproof Crimson (Dobbie); and Mrs. Hugh Dickson, cream and pink (Dobbie); and each of the following has an individuality of its own which separates it from creations of previous years—Zarina (Hemus); Doris Usher, cream and pink (A. E. Usher); Masterpiece, lavender blue (Dobbie); Picotee Waved (Eckford); Princess Juliana, primrose (Breadmore); Queen of Spain Spencer (Dobbie); Earl Spencer, brilliant orange; Kathleen MacGowan, sky-blue (Breadmore); Helio Paradise, mauve (Hemus); Charles Hemus, deep red (Hemus); Vicomte de Junze, rose; Mary Vipian, rose waved; and Mrs. E. Gilman, cream and rose (Eckford); and in addition the following of recent introduction are deserving of special mention—Mrs. A. Ireland, Asta Ohn, Mrs. C. W. Breadmore, Dodwell F. Browne, Mrs. Duncan, Colleen, Mrs. Townsend, Florence Wright, King Edward Spencer, Aurora

Spencer, Black Knight Spencer, Marjorie Willis, Evelyn Hemus, and Constance Oliver.

It is to be hoped that we will have learned by the succession of snow storms, frost and rain which this winter has brought us the advisability of trenching our stations in the autumn. How often have we seen the advice given—"trench in October, and leave the top spit open for the sweetening influences of the frost," and how few of us have heeded. Trenching, yes, if there is one lesson more than another that our love for sweet peas has forced upon us, it is the need for double trenching, or bastard trenching, according to the condition of the sub-soil, the next in importance being thin sowing and ruthless thinning out. Space below, around, and above is an absolute necessity not only for sweet peas but for everything else we would grow to perfection. We must remember also in our zeal for plants ten feet high, stems 24 inches long, with four blooms on every stem, the danger of overfeeding or feeding in too large doses. The manure must not be placed in layers six inches thick, but well incorporated with the soil, and it must be thoroughly rotted; the roots of our pets like a root-run that is sweet and fresh, and not stodged with manure, they will then branch out and take up the food as needed. We want fibrous roots for our sweet peas as well as for our fruit trees. Again, liquid stimulants should never be given until the blooms are beginning to show colour, and then only in weak solutions,



Copyright

SWEET PEA HELEN PIERCE, BLUE MARBLED

Mackey

The Chrysanthemum.

I.—General.

THE chrysanthemum to-day is one of our most popular decorative plants. Very few other garden subjects, cultivated for beauty alone, can claim such a long period of cultural attention from man as this gorgeous eastern flower. It is believed that the Chinese have cultivated it for over 2,000 years, while every one knows that it has been, and is now, held in the very highest repute, and even reverence, by the Japanese. Its flower forms part of the national arms of Japan, and one of the most popular holidays in that country is "Chrysanthemum Day." It was introduced into Europe about the year 1790—reaching France first and then England, where its good qualities were soon recognised. Special attention was paid to it in the old gardens of the Royal Horticultural Society at Chiswick, from which cuttings were freely distributed to nurserymen and others. The introduction of the now exceedingly popular Japanese varieties is due to the efforts of that noted traveller and plant collector, Robert Fortune, who in 1860, under the auspices of the Royal Horticultural Society, was travelling in the East in search of new plants. He discovered several varieties of chrysanthemum in Japan with weird-looking flowers, which he sent home to a nurseryman in England. These represented the first lot of Japanese chrysanthemums grown in these islands. When first exhibited they appear to have attracted very little attention, but ten years afterwards they were becoming popular, and since then have enjoyed an ever-increasing popularity, until at the present day they are first favourites as decorative plants during the declining months of the year. The chrysanthemum belongs to the daisy family (*compositæ*), its nearest relatives in this country being the corn marigold (*Chrysanthemum segetum*) and ox-eye daisy (*C. leucanthemum*). Its own botanical name is *C. indicum*, a Chinese plant, having in the wild state small yellow, single "petalled" flowers.

The cultivation of the chrysanthemum is a fascinating occupation for amateurs in gardening. There is a peculiar and absorbing interest in bringing the plant along through its various stages of development, and potting from the tiny bit of shoot inserted as a cutting, on to the period when it bursts into those gorgeous blooms that have held the admiration of millions for generations before the birth of the Founder of the Christian religion up to the present time. Man's interest in this flower has never waned during all these long years, and perhaps at no period of time has the chrysanthemum been held in higher esteem than it is at the present day. To the peoples of the East it is still The Heavenly Interview, while it has of a truth affected the conquest of the West, and is now enthroned among us as the Autumn Queen of Flowers.

There is not only interest and pleasure attached to the cultivation of the chrysanthemum, but many of the very first principles of gardening may be learned by taking their cultivation in hand from the early stages of growth to the final stages of flowering. We propose, therefore, to give a series of short chapters from month

to month dealing with the propagation and after-treatment of this plant, in the hope that many of our readers who have not attempted its cultivation before will be induced to start upon it at once, and so secure for themselves not only a delightful recreation but a glorious harvest of bloom when the crowded pageant of summer has passed, and the days shorten, and the sun's heat lessens, and the garden loses much of its wealth of colour and beauty.

II.—Propagation.

Amateur gardeners will find much interest in raising their own chrysanthemums from cuttings. In addition to the pleasure obtained in watching the young plants establish themselves it will give excellent practice in propagating herbaceous plants from cuttings. The cuttings are made from the young shoots that spring up from the "stools" of old plants that have been cut down after flowering. If the amateur has no stock already he can always purchase cuttings from the nurseryman at prices varying with the rarity of the variety. Whites, pinks, yellows, and bronzes are general favourites. The cuttings should be fairly strong without being gross, and the wood neither too soft nor too hard. The shoots used may be about two or two and a half inches long. It is prepared for insertion in the soil by making a clean cut with a sharp knife across the stem immediately below a joint, and then removing the leaves from the lower length of stem so that the foliage left will be well clear of the soil when the shoot is inserted. The soil used for striking should be light and pure; no manure of any kind must be used. Finely sifted loam, to which a little sifted leaf-mould and sand has been added, may be used. The body of the soil is loam, the sifted leaf-mould and sand tend to keep it open, as it is important that the soil should be of an open texture even when fairly firmed down so as to admit of a free interchange of air. The propagator must always remember that the wounded end of the cutting must be supplied with fresh air, as breathing is more than ordinary active during the period of new root formation. The cuttings may be struck either in small pots or in shallow boxes. In either case provision must be made for good free drainage, as stagnant water will be fatal to success. The minute soil spaces are required for air, and must never be allowed to hold water. The moisture that naturally adheres to the soil particles will supply abundance of water to the rooting shoots. This is a vital point that cannot be overlooked. Drainage is secured by filling the bottom of the pot or box with broken fragments of old flower pots—"corks" as they are called by gardeners. The corks are next covered with a layer of old decayed leaves that act as a filter, preventing the soil being washed down among them. If the pots are half filled with corks the filtering layering may be left out. The pots are next filled with the prepared soil, and pressed down. The cuttings are now pushed into the soil. If two or three cuttings are put in one pot they should be inserted near the sides. The soil is finally pressed down fairly firm round the cuttings, and watered gently with a fine rose-spout can. The after-watering is a critical operation, and intelligence must be used as to its frequency. The pot holding

the cuttings may be kept in a not too cold frame or house until they have rooted. It must be remembered that the chrysanthemum—like all herbaceous cuttings—is leafy, and therefore liable to lose water by transpiration, especially if exposed to bright sunlight. If they lose more water than they can take up from the soil the shoots will flag. To prevent this the cuttings should be lightly shaded (sheets of paper will do) from direct sunlight until they have fairly started to make roots. Under favourable conditions roots will be formed in about a month or three weeks according to the temperature. The after-treatment of the rooted plants will be discussed later.

Winter Spraying of Fruit Trees.

THE winter spraying of fruit trees with a caustic wash is now generally recognised as an essential annual routine in order to keep the bark clean and the trees free from disease. In an article on the treatment of neglected orchards, published in the current "Journal of the [English] Board of Agriculture," reference is made to the importance of this work, and some very useful information is given upon the subject under the following three sub-headings:—

"Winter Washing of Fruit Trees.—A neglected orchard not only harbours during the winter all manner of insect enemies which commence their ravages in spring, but forms a nursery or breeding-ground from which other orchards are infested with noxious insects. The first step, therefore, is to destroy these pests as far as possible, and for this purpose winter washing is practised.

"The caustic or burning wash applied clears away moss, lichen and other vegetable growths that are not only harmful to the health of the tree, but which also act as shelter-places for injurious insects, while at the same time the wash may reach the insects themselves in their various stages of development.

"The woolly aphis, the apple blossom weevil, the car-wig, the caterpillar of the codling moth in its cocoon, and other insects are found during the winter sheltering under cover of rough bark and of lichenous and other growths on fruit trees. The destruction of their winter quarters places such insects at a disadvantage, and their number is in consequence materially reduced. Further, some of the insects are killed by the wash itself.

"It has been found in practice that a wash used with effect against an insect in its adult, larval, or pupal stage may prove quite ineffective against the egg of the insect, and hence winter washing should be followed by careful observation in spring, so that young, newly-hatched insects may be dealt with—according to their kind—before they have had time to do great harm or to multiply.

"Formula for Winter Wash.—The new caustic winter wash: Caustic soda (98 per cent.), sulphate of iron, lime, paraffin, and water.

"The improved winter wash, as suggested by Mr. S. U. Pickering, F.R.S., Director of the Woburn Experimental Fruit Farm, is now recommended. Its formula

is:—Iron sulphate, $\frac{1}{2}$ lb.; lime, $\frac{1}{2}$ lb.; caustic soda, 2 lbs.; paraffin (solar distillate), 5 pints; and water to make 10 gallons.

"In order to prepare the wash the iron sulphate should be dissolved in about 9 gallons of water. The lime should then be slaked in a little water and well stirred, a little more water being added to make a 'milk.' The 'milk' of lime should next be run into the iron sulphate solution through a piece of sacking or a fine sieve, to remove grit or coarse particles. The paraffin should then be added and the mixture churned thoroughly. Just before using, the caustic soda, in the powdered form, should be added to complete the 'wash.'

"This wash, which has both a cleansing property and an insecticidal value, is recommended for application while the trees are dormant, and certainly before the buds have burst. Perhaps the greatest advantage would result from such a wash if applied about the beginning of February.

"Note.—As the wash has a burning effect on the hands, care should be exercised in employing it. Rubber gloves are sometimes used to protect the hands, but these should be so secured that the wash cannot run in under the rubber. The face, the eyes especially, should also be protected.

"It is advisable not to allow live stock in grass orchards for a week or two after spraying.

"Effect of Caustic and Other Washes on the Health of the Sprayed Plants.—Comparatively few exact experiments have been conducted to discover how caustic washes affect the health of the plants themselves. Complaint is sometimes made that the plants suffer severely, and with constantly repeated washings this may be true. The winter wash above recommended need not be applied annually, but only at intervals of some years."

Note.

GLASS WALLS FOR ESPALIERS.—Some interesting experiments on growing Espalier pears on glass instead of masonry walls have been recently conducted in France. The idea was to utilise the north as well as the south side of the wall by using a substance transparent to light. In one of the experiments a wall of glass $6\frac{1}{2}$ feet high and about 60 feet long was erected in an east and west direction, and fifteen pear trees (of the variety "Winter Doyen") planted on each side. The south side yielded 134 pears (total weight 91 lbs.), and the north side carried 119 pears, having a total weight of 77 lbs. The quality of fruit was good on both sides, while it was noticed that those on the north side had smoother skins than those on the south side. So far as temperature goes there is very little difference between the two sides, as the heat rays easily penetrate through the glass. It should be noted that a ledge of glass forming a narrow roof was run along the top of the wall on each side. In the matter of cost it was found that the glass wall would be about the same as one of bricks. The disadvantage of glass is that, unlike a brick wall, it does not retain heat, and therefore is not so efficient in the event of frosty nights. It is too early to form an opinion on the value of this method.

The Reader.

THE CULTURE OF THE CHRYSANTHEMUM. By W. Wells. Revised Edition. 1910. 1s. 6d. Published by the Author: Mersham, Surrey. This is a practical handbook written specially for amateurs by a specialist in chrysanthemum culture. That it has well served its purpose is evidenced by the fact that it has now reached its fiftieth thousand. After an interesting introduction the author takes his reader in hand, and guides him step by step along the road leading to cultural success. The different classes of these popular flowers are described and their special cultural requirements noted. The exhibitor is well catered for, and all necessary information is given concerning choice of varieties, dressing of blooms, and other matters demanded by the requirements of the exhibition table. The pests and diseases of the chrysanthemum are also referred to, and advice given as to their prevention and remedy. Two chapters are given—one entitled "Hints on what not to do" and "Hints on what to do"—that ought to prove exceedingly useful to beginners. Speaking about the early flowering chrysanthemum our author says—"Of late newer chrysanthemums easy to cultivate have received considerable attention, and great strides have been made—more particularly with the early flowering varieties. This class of chrysanthemum has much to recommend it. It may be raised by persons of the most limited means; it makes a fine autumn display for beds and borders, or it may be grown in thousands for cut flowers for market. The initial cost is not more than that of the usual bedding-out plants, and therefore early flowering chrysanthemums are within the reach of thousands who cannot cultivate the large indoor varieties." The book is well arranged, clearly written and nicely illustrated, and seems to us to be just the type of manual that would best serve the purpose of the amateur.

MONTHLY GLEANINGS IN A SCOTTISH GARDEN. By L. H. Soutar. 6s. T. Fisher Unwin. "An old Celtic *rann* says that in the month of September God created Peace, and Fiona McLeod tells a quaint island tale in which it is related that Christ as a Shepherd and the months as sheep strayed upon the hills of time. Over this old-world tale hangs the mystic glamour of Celtic musings; the names of these twelve wandering sheep form the headings to the twelve chapters of 'Monthly Gleanings.'" Thus the authoress introduces this delightfully-written volume to her readers. The whole round of the year is taken month by month, and the shifting panorama of the seasons as observed in a Scottish garden is described with rare appreciation and insight. It is in no sense of the term a cultural handbook, but is what in its way is far better—a stimulating work giving the observations and impressions of one who is a true garden lover and close student of nature through all her moods of the year. Its chatty and descriptive chapters form excellent reading. The humorous side of Scottish country life is not unnoticed, as for example in the following extract:—"In a garden in the far north of Scotland the winter cabbages are blanched and preserved by putting them in the early winter into a trench lined with straw, roots up, heads

down, and I can remember the merriment and astonishment of a south-country visitor on beholding the 'daft-like process of growing cabbages in a Highland garden.' The old gardener was a wise man, and might have been credited with quoting Dr. Arnold when he replied. 'It is a daft man, am thinking, that laughs, but it's a wise man that'll be knowing what's good for aiting.'" The book is handsomely illustrated, with a coloured frontispiece and 24 half-tone blocks inserted as plates. It is a work that ought to find a place in every country-house library.

ILLUSTRATED GUIDE TO TREE AND FLOWERS. By H. G. Jameson. 2s. 6d. Simpkin, Marshall, Hamilton, Kent & Co.—Professor Robertson's dictum that "we do not know a thing properly until we know its name" is taken as the motto for this useful little handbook. Its professed intention is to "help the ordinary nature lover, who may perhaps have little or no special knowledge of botany to find out the names of such trees and flowers as he meets with" in his rambles in the country. In accomplishing this task the author makes use of a continuous series of small marginal drawings throughout the whole 136 pages of the guide, so that the work of the student in finding out the name of any particular flower is considerably lightened. The idea has been worked out before with respect to genera, but we know of no other book where the plan is carried out so far as species are concerned. To nature-study students and to any young gardener prepared to go through the discipline of studying the destructive characters of the wild plants of the country-side this little volume is just the kind of book he wants, and to all such we cordially recommend it.

Note.

FINGER AND TOE DISEASE.—It is now generally recognised that the only remedy at all preventative against this most destructive pest is quicklime. The minute organism that causes the trouble is a species of slime fungus that exists in affected soils, and readily attacks the roots of any cruciferous plant (either crop plant or weed) that live in such soils. It has the peculiarity of preferring acid to non-acid soils, and thus there is one reason at least why quicklime is a specific; it corrects all acidity if applied in sufficient quantity. Land frequently dressed with large quantities of farm-yard manure is very liable to become acid, as is also land manured with artificials of an acid nature, such as superphosphate of lime. A further verification of the utility of lime is forthcoming in the published results of a series of garden experiments conducted in Worcester-shire on land on which a crop of Brussels sprouts was completely destroyed by finger and toe disease. The next year it was treated with 13 tons of quicklime to the statute acre, 6½ tons the next year, and 3½ tons the next two following years. The lime was applied as a top-dressing over one half and dug in on the other half, and the surprising thing is that the former appears to be the better method, as it is reported that in the former case 77.8 of the plants were free from the disease, and in the latter 66.7 (the others being only very slightly affected). Gas lime, apatite and vaporite were also tried, but without any effect.

Plan and Method of Planting a Small Vegetable Garden.

IN the arrangement or laying out of a small vegetable garden it is a great advantage for the working of the plot to have it of a regular shape, preferably oblong or rectangular, with the longer sides running east and west, as then rows of vegetables would run north and south, and thus be fully exposed on both sides to the sun's rays. Fruit trees are sometimes grown on the same ground in conjunction with the vegetables, but this is not to be recommended. In the cultivation of the soil necessary for the different vegetable crops, the roots of the fruit trees often become injured; the shade from the trees is detrimental to the production of good vegetables; hence it is better if fruit trees and bushes are to be grown to keep them in separate quarters, or if the plot of ground to be formed into a garden is of irregular shape; plant the fruit trees so as to leave regular plots for growing vegetables, the fruit trees then act as a shelter to the other crops.

Having decided on the shape of the garden, the next important consideration is the fencing of it. A good hedge of whitethorn and beech is, next to a wall, the best fence; but if such a hedge is planted it must be protected for a few years from farm animals, otherwise they graze on the tender leaves, and the hedge becomes stunted, and never seems to recover itself. A wire fence four feet high must be provided to protect the hedge as well as the garden, and wire-netting is necessary if fowl or rabbits are about the place, otherwise seeds and plants will suffer.

The garden should be divided into convenient sized plots, and at least one walk three feet wide should run down the centre to allow for wheeling manure, &c. The walks should be well formed, taking out the soil to the depth of at least six inches, and filling up with broken stones, with a few inches of fine gravel or coal-ashes on top. Walks may be edged with box, strawberries, arabis, or such like dwarf-growing plants. Strawberries are both ornamental and useful. Even round stones (whitewashed) make a neat edging, and in most parts of the country stones are easily procured.

In regard to cropping the garden, a border six feet wide should be marked off on the side facing south for the growing of early vegetables, seed beds, frames, &c. All vegetables succeed best in a deep soil—that is, a soil of fairly uniform texture to the depth of two feet or more—hence it should be the aim of every grower to possess such a soil. Of course it is assumed that the plot selected is properly drained, otherwise that should be the first work to be attended to. A regular system of rotation of crops should be practised in growing vegetables for the same reasons, as the good farmer rotates his crops, for although the same plot of ground may by being judiciously manured produce for several years in succession good crops of a particular vegetable, yet in the end the soil would become exhausted and refuse to produce that crop, notwithstanding the

application of manure. Thus such vegetables as parsnips, carrots, turnips, peas, beans, &c., should be grown in one plot, and cabbage, broccoli, cauliflowers, lettuce, &c., in another. Next season the latter should be grown where the former were this season, and *vice versa*. Permanent crops, such as rhubarb, seakale, or asparagus, if grown, should be kept in a plot by themselves.

No time should be lost in getting all the necessary preparatory work completed, such as fencing, forming walks, digging, manuring, &c., as many things may soon be sown. Read carefully the instructions given under the heading "The Vegetable Garden" each month in IRISH GARDENING, and put it in practice.

P. J. GRAY.

The Month's Work.

Flower Garden and Pleasure Grounds.

By E. KNOWLDIN, F.R.H.S.

COMING events are now evident in the pushing of the earlier bulbs. Dare we, just for once—only once, it shan't occur again—offer our subject mixed? Pale snowdrops, the gay crocus, fragrant *Iris reticulata* of surpassing beauty, and the aconite "that decks its little merry face with gold," all may, or may not, enter into the scheme of the formal spring garden, defining circles, squares, triangles, ovals, stars, half-moons, snaky evolutions, and other fearful phenomena with which, in some instances, the fair face of nice bits of greensward are defiled; but it is in the pleasure grounds, which are such not only in name but in nature that to these vernal heralds one's heart goes out. Here, surely, Shelley caught his ode to spring—

"Thou art the child that wearest

Thy Mother's dying smile, tender and sweet,

Thy Mother, Autumn, for whose grave thou bearest

Fresh Flowers, and beams like flowers, with gentle feet,

Disturbing not the leaves which are her winding-sheet."

First the winter aconite (*Eranthis hyemalis*), with its dainty lingerie of satin-green, each tiny bit bearing the sun-god's kiss, happy in the hard clay under the leafless elms, and oaks, and chestnuts, whilst in more open spots spring patches of the native snowdrop (*G. nivalis*), ever spreading through the mossy turf, and, like that babbling brook which haunts every gardening pen, going on for ever. And then the Dutch crocus (to come) in purple and gold, and white, warmed up by the orange stamens, the green sheaths of which now pierce the mossy sward! Who would grudge the first small cost of sowing them, and ever after reap the compound interest the vernal balance sheet discloses on the credit side? Sow, we say, for that seems the more natural disposition of these bits of gay colouring (crocus). You take your bag of a thousand—if ten thousand, ten times the better—choose your spots, and literally sow

them broadcast, then dibble in each exactly where it has fallen—all colours, for the Dutch crocus is one of those things one dares to mix, and finds no incongruity. Of the daffodil, Wordsworth's darling, anon. We may, or may not, briefly discuss it from our own angle of vision, come March, without obstructing those who regard it from other points of view.

Lenten roses—those varieties and hybrids of the Orientalis, Olympian, and Colchicus hellebores—surely deserve, at least, a passing notice, not as garden flowers, perhaps, as they hardly conform to our notions of propriety of habit, or the fireworkly display of the up-to-date flower-garden. Their blossoms now appearing in the more sheltered situations ranging in hue from white, greeny-white, dull rose, clearer pinks, and on to the deepest of plum purples, appear in the altogether to subdue themselves to the season of Lent. True, they are adapted to the hardy border in a way, but it is not the way we would have them. As wildlings in the shrubberies, stretching away under the depth of the now deciduous trees, they have characteristic features at this season peculiarly their own, and later on become merged in the tangled greenery of depending summer foliage to remain unnoticed, but quite happy if they escape the tidying hand and are allowed to gather to their bosoms the dead leaves of a past season. Here they will make quite bushy clumps, and eventually colonise comparatively bare areas in their own way of reproduction by seeds. Trinity College Botanic Gardens provide a good example of what may be done in this direction. Some attention was called to Lenten roses in 1907, when, during March of that year, the Royal Horticultural Society, at its first meeting in the windy month, offered first and second prizes to the tune of seven guineas and three guineas, open to all, for a dozen in not less than six varieties. The idea was good, if the results were poor. Should grass outline the shrubberies, which it does in most places, then at this season the cleanings up of the edgings may well be bestowed through and around the Lenten roses, which, to them, will be grateful and comforting, with which we are brought to a rather important phase of February work in verge-trimming. Our subject of flower-garden and pleasure-grounds, by the way, may still run on parallel lines, for what is sauce of the kind for the one is an indispensable relish to the other. It is now opportune for this work of verge-trimming—work which in the absence of frost can be carried on and out to a finish during indifferent weather. And not only is it annually necessary for the season, but taken in hand now one can have all put decently and in order, giving that air of smartness which heightens the charms of spring in garden and kept grounds. It may be that after the process of trimming over several years irregularities become evident in paths, walks, and avenues, in the latter case even as much as, perhaps, to the extent of a foot or more in width. A ten or twelve-foot avenue, or whatever it is, should, of course, be ten or twelve feet wide, or whatever it is supposed to be, whether running on straight or curved lines, and where it is intended to bring matters into shape it is as well to get it done

before March comes in to give newly-laid sods the opportunity of getting a grip ere possible dry, parching winds take effect. This advisedly. We think of the trouble often noticed in this direction in making up a verge by the addition of sods, perhaps but a few inches in width, or even it may be a foot in width, to prevent the shifting of which we have seen pegs temporarily employed. It is a bad and troublesome method, entirely obviated by the simple method of undercutting with the sodding-iron a considerable length of the existing verge, incising it to such width as may be necessary to extend with the edging-iron, and then with the same implement gradually pushing out the whole length in its entirety. After this, one has merely to fill in the intervening blank with new sods, roll down, and trim the verge.

In the above operation of restoring walks or avenues to a uniform width it is generally commendable to lightly fork up the marginal surface to be occupied with the sod and giving it a fair sprinkling of good compost, care being taken at the same time to bring all to a proper level by filling up holes or depressions. Above and beyond the necessary rolling, prior to the final trimming with the edging-iron, allowance for which will have been made by extending the projected sod two or three inches beyond the actually required outline, the turf-beater, made of a heavy bit of slab, with a long handle set in at an angle, is a useful implement, not too frequently met with in Irish gardens, but which should be absent from none of them. In the hands of an accomplished workman the final verge-trimming, where curved lines come into play, is quite a fine art. As a matter of fact, a rough outline will have been taken of this, in the first instance, with a good garden-line, kept in position by pegs placed sufficiently close where sharp curves obtain, so as to preserve the proper contour. If the latter has been done, the final operation is but little more than a repetition of the lining out cutting, being done at a slight angle by the edging-iron being a little inclined towards the worker. Purely vertically cut edges seldom retain a clean outline the season through. The whole thing, if carried out as suggested, will be found perfectly simple, and the finished work simply perfect.

We have no desire to poke our nose into the glass department, cheerless and cold as it is outside, nor do we intend to, for doubtless the capable hand looking after it will see that sowings and cuttings of such things as are dear to the heart of the orthodox bedder will be ready by the time we are ready for them, so merely hint that we should like a good stock of everything good that is going, including Heavenly Blue lobelia (no double—no good outside), *Salvia* Pride of Zurich or Fireball, plenty of Paul Crampels, seedling verbenas and seedling petunias of a good strain, tuberous begonias, and fibrous-rooted bedding begonias, heliotrope Lord Roberts, plenty of the silvery forms of poa, and dactylis grasses, dwarf bedding asters, silver-leaved geraniums, and Crystal Palace Gem, if he can get it, and, by the way, a good stock of that capital old edging plant, *Gnaphalium lanatum*, for all of which thanks in anticipation.

The Fruit Grounds.

By A. BARKER, Carrigoran, Newmarket-on-Fergus,
Co. Clare.

OWING to frost, frequent rains, and generally unfavourable weather, operations amongst hardy fruits have been unusually retarded this season. During the past five weeks here we have had nearly all kinds of bad weather, including thunder-storms, and on the past sixteen days in succession we have had rain to record (a few fine days early in January being the only exception). This seems to have been a very general state of weather conditions in Ireland. Advantage must be taken of every possible opportunity to complete all kinds of pruning; no injurious effects result from pruning in moderately frosty weather, so push on pruning to a finish on every dry day, and give the trees an opportunity to recover before the sap begins to run again.

If not already done head back any trees to be re-grafted later on in the year. First decide on where the scions are to be placed, then saw off the branches three or four inches above the part allocated for the scions; this allows of making a fresh clean cut with the saw at grafting time. Large trees of unsatisfactory kinds may very advantageously be re-grafted with more up-to-date or useful varieties such as are known to do well in the locality. If satisfactory scions are at hand, tie up in bundles, label the different varieties, and heel in deeply on ground shaded from sun. If new varieties are desired most nurserymen will supply scions at a small cost to regular customers, and two or three different varieties may be grafted on the same tree if desired.

Finish off the nailing and training of all fruit trees on walls at once, and dig the borders as advised in last month's notes. If possible, to spare the ground, do not plant any crop whatever within five or six feet of base of wall; more healthy, vigorous trees, consequently heavier crops of much superior fruit, will follow a continuation of this practice.

SPRAYING.—It is not advisable to use any caustic sprays or washes after the end of this month, so make the most desirable preparations for completing this work as early as possible where it is to be done. The formula I gave last month (one of the Woburn winter washes) I have used here with very good effect. In selecting a spraying compound do not fix on one professing to kill sundry and all insects, fungus, &c., as such generally prove disappointing. Trees that may have been sprayed last November or December may be sprayed again towards the end of the month; this renders the spraying much more effectual.

PLANTING.—Lose no favourable opportunity of finishing off planting; raspberries and bush fruits may be left to the last. It is a great aid where planting fruit trees, if possible to have two carts (more or less) of thoroughly dry compost under cover of an open shed, &c., so that a quantity may be mixed with the stable soil around the roots as planting proceeds. This compost greatly facilitates planting in unfavourable conditions;

it is good for the trees, and allows of plenty of trampling to well firm them. If possible, the bulk of compost may be of new loam, otherwise any good garden soil will do, with a mixture of road scrapings, lime rubble, leaf mould, and dry ashes from a fire heap, where garden refuse, &c., has been burnt; or the last four ingredients mixed together would answer well. Small and medium size trees should be tramped and made firm enough to dispense with any staking; larger trees must be staked; a mulch of litter manure may be applied as the planting is finished or left until the approach of dry weather. This mulch should also be applied to any previously planted trees left un-mulched.

BUSH FRUITS.—Any directions I could now give must be very nearly a reiteration of what I wrote last month. During this month any bushes that may be infested with moss or lichens should be dusted over with fine air-staked lime, choosing a calm day when the bushes are wet or very damp. Use plenty of lime; it will kill the moss, and also act as a deterrent where birds are likely to attack the buds, and may be advantageously dusted all over the bush. Continue to look over black currants for big buds, while the mitey buds are easily detected, and burn all that may be found. The mites spread or migrate from bush to bush in early spring, so it is obvious that the more attention paid to this destructive process the less of the mite to migrate when the time comes. The mitey buds may readily be distinguished by their roundish and much-enlarged appearance compared with the healthy buds.

THE FRUIT ROOM.—Apples that are intended to be kept as late as possible in the season would be better carefully looked over, and all that are perfectly sound placed in the most favourable part of the fruit room and covered over with sheets of paper, or they may be stored away in drawers or in shallow boxes in dark or nearly dark rooms, where an even and moderate temperature can be maintained; take care that they are not reached by frost.

PEARS may also be similarly treated. A few varieties of good quality and late keepers that do very well here along with the universally popular Bramley's Seedling and Lane's Prince Albert are—London Pippin, Annie Elizabeth, and Newton Wonder (Alfriston should not be overlooked amongst late keepers) for cooking purposes. We are using a fine batch of London Pippin now. This is a very desirable apple, though not well known; very rarely fails to carry a heavy crop of fruit that may be equally well used for cooking and eating. It is also of a very attractive golden-yellow colour, and the trees are the most healthy and vigorous. These will be succeeded by Annie Elizabeth, a very good late-keeping apple. The medium-sized fruits also make very good dessert apples. Of dessert apples Cox's Orange Pippin has kept remarkably well this year—we have them quite firm and fresh up to the present. Our other good, late-keeping apples are—Barnack Beauty, Adams' Pearmain, Sturmer Pippin (Adams' Pearmain is a showy apple, very juicy, and pleasantly flavoured). The above are all apples very useful either for home use or market purposes.

The Vegetable Garden.

By WILLIAM TYNDALL, County Horticultural Instructor, Kildare.

GET all vacant ground trenched or deeply dug as soon as possible, so as to leave as little work as possible to be done in the busy time now close at hand that can with propriety be now done. Never work the soil if the ground is wet, and the rougher the surface can be made, whether the ground has been trenched or dug, the better. In digging in manure to plots it is always best to do this immediately the manure is spread, as if left for any length of time and drying winds prevailing much of the value of the manure is lost to the air.

Plants growing in frames will require careful airing and watering during the next couple of months, especially plants raised from seed grown on hot-beds, as lettuce, radish, cauliflower, Brussels sprouts, &c., recommended in last month's work. In airing frames always give a little air before the temperature has very much increased, then gradually increase it as the day gets warmer. Close early in the afternoon to husband sun heat to keep the plants warm during the night. In frosty weather, such as we now have, the frames will especially require an extra covering of mats or hay to protect the plants from injury. As the plants raised from seed sown last month become fit they must be singled out into other boxes a couple of inches apart. The boxes for the seedlings may be filled by a like compost as given for sowing the seed, with the addition of a gallon or two of fine bonemeal to each barrowful. In filling the boxes put a layer of leaves over the drainage, then some old mushroom bed manure passed through a half-inch riddle, and then a couple of inches of the compost, making all quite firm. Plants out of boxes prepared as recommended should always be lifted with balls of soil attached to the roots, as such always start growing much sooner when planted and are much less likely to fail than plants lifted from boxes without taking such precautions.

EARLY POTATOES.—Towards the end of the month in sheltered gardens, and where the soil is not of a heavy nature, a small sowing can be made at the foot of a south wall or on a dry, warm east border, where the haulms of the potatoes would not suffer so much from frost, owing to the wall or hedge shading them from morning sun. Two good varieties are Ninetyfold and Puritan—both heavy croppers—while Epicure and British Queen are of first-rate quality. The last named, though generally considered only a second early, is only a few days behind the early sorts, while in crop and quality it is much superior. Potatoes planted in frames heated by hot water-pipes or on hotbeds during last month should now be well up, and early ventilation in mild weather will be required, shutting the frames up early. A mistake often made in growing potatoes in frames is lack of moisture to the roots in the early stages of growth, as a check causes the plants to form small and uneven tubers. Mould up the plants before the young potatoes appear near the surface, but before doing so give a small dressing of a good fertiliser, watering in with tepid water.

CELERY.—About the middle of the month make a sowing of celery for early use. Sow in boxes and place in a frame on a good hotbed close to the glass, so that the plants will be stout and strong. Cover the seed lightly, and shade till the plants begin to appear. Early Gem and Clayworth Prize Pink are fine early varieties, and few plants will run to seed if given careful attention, not letting the plants ever get dry at the roots, or giving them a chill through giving too much air when the wind is severe and cold, and carefully hardening off before planting out.

SPRING CABBAGE.—No crop in the garden is more important to the cottager than his plot of spring cabbage. In dry weather the ground between the rows should be hoed and the plants slightly moulded up to hasten growth. Before earthing give a dressing of nitrate of soda; a teaspoonful to each plant will start growth quickly, and the cabbages will cook more tender. If more ground is to be planted with cabbages the end of this month is a good time to put them out, and they will form a good succession to those planted last September.

ONIONS.—Last year was not a good onion year with many cottagers and amateurs I know, and I have endeavoured to find out some of the causes of failure. I believe late sowing and leaving the plants too long without thinning are chiefly responsible, while shallow cultivation and the want of manure are also other causes of failure. No crop requires deeper cultivation or heavier manuring of the ground, and this should have been done by now, giving the surface a light dusting of lime. If the soil is warm and free-working, sow the seed in February, while in heavy, cold soils defer sowing till March. Make the soil firm by walking before sowing in lines one foot apart. Ailsa Craig and Laxton's Sandy Prize are fine for large bulbs, and Bedfordshire Champion will give a crop of nice-sized onions that keep well.

PARSNIPS.—If the ground is fit parsnip seed can be sown about the middle of the month on ground deeply cultivated and well manured for the previous crop, so that no manure will be required for parsnip. Sow in rows two feet apart, covering the seed about an inch deep. Student is a good variety, while Model White is fine for exhibition if sown where holes have been bored three feet deep and nine inches wide at top, and filled with fine soil, leaf-mould, and sand passed through a half-inch riddle and pressed firm.



HOP SHOOTS AS A VEGETABLE.—A very commonly used spring vegetable in different Continental countries (Belgium especially) is the hop plant. All gardeners know that the hop throws up in the early part of the year strong-growing shoots; these can be cut off when about four or five inches long and boiled and eaten like asparagus. If the shoots are blanched they are particularly agreeable, although we believe this is not the common practice. Like young nettle shoots (the hop and nettle are closely allied botanically) the young, fresh growths of the hop form an excellent food adjunct in the spring of the year.

Notes

WE have received from Messrs. Maunsel & Co. a copy of the recently published collection of the works of the late Miss Charlotte Grace O'Brien, with an introduction by her kinsman, Mr. Stephen Gwynn. We hope to refer to this volume more fully in our next number.

BELOW in the town they were wrangling and brawling
On the high hill of heaven the soft rain was falling—
The soft rain, the sweet rain, so silvery shining
That it charmed us and lulled us till day was declining.

THE *Kew Bulletin*, in referring to the new Chinese species of trees and shrubs collected by Mr. E. H. Wilson, remarks upon the number of new and monotypic genera that there are amongst them:—"Apart from whatever beauty of flower or leaf they may possess, there is always a peculiar charm and interest attached to these solitary types." Ten monotypic genera grown at Kew are botanically described and two are illustrated by photographic reproductions.

DRY ROT IN POTATOES.—Miss Sibyl Longman, of the University College, Reading, in a paper read before the Linnean Society, gives the results of some experimental work she has been carrying on with the fungus (*Fusarium solani*) of this disease. Miss Longman corroborates the work of Smith and Swingle as to the true parasitical nature of this fungus, and of its ability to attack both the stored tubers and the growing aerial shoots. Further, it seems that there is no necessary connection in point of time between dry rot and wet rot. The possibility of sterilising affected tubers by heat was tried, but it was found that the thermal death point of the fungus was higher than that of the tuber, so no remedy lies in that method.

DESTRUCTION OF MOSS ON LAWN, &c.—The Cornwall County Council has been carrying on for several years experiments having for their object the eradication of moss on grass lands. It has been found that the application of new superphosphate (28-30 per cent.) at the rate of 6 cwt. an acre, and applied in the month of February for two consecutive years, entirely destroys the moss, even in badly affected lands (in one case the carpet of moss was an inch deep). A single application seems to be sufficient where the growth of moss is not very abundant.

AMERICAN GOOSEBERRY MILDEW.—In the recently issued report of the assistant secretary to the Board of Agriculture (England) detailed references are made to the distribution of this disease in England and to the remedies that have been applied to prevent its spread. It appears from Mr. Middleton's report that, with the exception of the county of Kent, it has spread very little during the past season. The following are among other suggestions offered to fruit growers: (1) When the disease appears in a garden it must not be assumed that the plantation is ruined; (2) neither must it be assumed that mildew is not dangerous and may remain untreated; (3) spraying with liver of sulphur in June and July will check the spread of the disease, and will secure healthy shoots next season; (4) when wood has been formed it should be protected by spraying with

Bordeaux mixture. Bordeaux may be used instead of liver of sulphur as soon as the berries have been picked. It is to be preferred to liver of sulphur for use in August and September; (5) diseased tips should be removed as soon as active growth has ceased. The earlier they are removed the better, provided that the season is sufficiently advanced to ensure that the buds on the shortened shoots do not begin to grow; (6) the bushes should be carefully pruned during the winter months, plants that have become too dense should be thinned, and the last traces of the disease removed.

INTENSIVE CULTURE.—An exhibition on the results of intensive culture will be held at Westminster, in the hall of the Royal Horticultural Society of England, on Wednesday, the 23rd of March.

"THE best things are the nearest: breath in your nostrils, light in your eyes, flowers at your feet, duties at your hand, the path of God just before you. Then do not grasp at the stars, but do life's plain, common work as it comes, certain that daily duties and daily bread are the sweetest things of life."

THE TALLEST TREES IN THE WORLD.—According to Professor Sargent the tallest American tree whose height has been properly authenticated is the Mammoth tree (*Sequoia gigantea*), one specimen of which (in 1882) was 325 feet. Several specimens of the same tree rises to 300 feet. The next tallest, it seems, is a species of gum-tree (*Eucalyptus amygdalina*) found growing in Australia, the height of which approximately may be 300 or 303 feet.

"So have I seen a rose newly springing from the cliffs of its hood, and at first it was fair as the morning, and full of the dew of heaven as a lamb's fleece; but when a ruder breath had forced open its virgin modesty, and dismantled its two youthful and unripe retirements, it began to put on darkness, and decline to softness, and the symptoms of a sickly age; it bowed the head and broke its stalk, and at night, having lost some of its leaves and all its beauty, it fell into the portion of weeds and out-worn faces."—*Jeremy Taylor*.

A SERIOUS GARDEN PEST.—A correspondent asks for information concerning the eelworm, remarking that gardeners as a rule fail to realise the extent and seriousness of the damage done by this pest. The eelworm is especially destructive to seedlings raised under glass, and we notice that our English contemporary—*The Fruit Grower and Market Gardener*—is drawing special attention to its ravages in Great Britain. It attacks among other plants tomatoes, cucumbers, beans, Roman hyacinths, leeks, and even young gooseberry bushes. The eelworms enter the young roots from the soil, and in some establishments the soil gets so plentifully inoculated with ova and hatched-out young of the "worm" that it becomes entirely unsuited for the growth of such plants as can be used as hosts for these particular little creatures. The only remedy for such soils is sterilisation—that is, subjecting it to a temperature high enough to kill off the microscopical worms and their eggs. For particulars as to the life-history of this organism we direct our readers' attention to the article by Professor Carpenter in our next issue.

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VOLUME V.
No. 49

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

MARCH
1920

The Yew

By ARCHIBALD E. MOERAN, Portumna, Co. Galway

IF we go back to the vague "once upon a time" of our history when man began to invent and use primitive weapons to aid him in procuring food, or in inter-tribal arguments, we can understand that the yew soon became a tree of the first importance to the sportsman and the man of war. In the great woods that clothed Ireland there were but three or four species of tree all told—but the yew was one of them, and especially on rocky hill-sides was plentiful enough, and no other timber—not even the oak—was as heavy and hard and tough. A well-balanced club of yew would light on an

enemy's skull with a woeful crash, as there was a spring in the handle that no other timber gave, and which made such exercise quite a pleasure.

Through the stone age and the bronze age yew would naturally be the wood used for the handles for the universal axe. No wood is more suitable for carving and polishing, and this, of course,

was just what was wanted. The more expensive furniture—platters, doors, and numbers of odds and ends of domestic utensils—were made of yew, and later a country famous for its archery

depended on this tree to supply its bows.

To-day we find yew-logs in plenty, hard and tough, and stained a dull brown by their centuries of seclusion under fifteen feet of bog. Sometimes we find the manufactured article—the handle or the stool—and I know of one place where there was a "corduroy" road exposed year by year as the turf was cut leading down to a ford on the Shannon. The cross pieces were mostly of

yew checked into the side-logs, and held in place by yew and oak pins. By the way, it is not generally realised that what is called the Irish "yew"—that is the upright-growing variety—is not the old indigenous yew at all, but a "sport" that was found growing near Florence Court, Co. Fermanagh, about 150 years ago, and per-



A YEW TREE
Copied from an old woodcut

petuated. The golden-berried yew was quite accidentally raised, in Kildare, I think, and it also has kept true to its newly-founded type.

The yew has practically no commercial value now, and it is so slow of growth that it certainly does not lend itself to the modern desire for quick returns. It takes about 500 years to slowly swell its butt into a respectable log, and there are yews in England, and probably in Ireland also, that are certainly 1,000 years old, and are still possessed of all their faculties. From very ancient times the yew was considered especially suitable for planting near places of worship, and most of our historic trees stand by the crumbling ruins of the churches they have long outlived, placed there by the pious hands of men whose bodies have crumbled into the dust of utter oblivion hundreds and hundreds of years ago, and all their good deeds are forgotten, save this one monument.

It is the "English yew," as it is called, that is the original spreading yew that is used for the making of hedges and the clipping into fantastic shapes, in what is called topiary work. The reason it is so suitable for this is, that it is a very strong shade bearer, and consequently grows dense, and no matter how much it is cut back it sprouts again stronger than ever.

Yew leaves if eaten by cattle are injurious and often fatal. This, I believe, is not because they contain any poisonous matter, but because the sharp spine at the end of each leaf sets up irritation internally. Certainly withered yew clippings are much more dangerous than fresh yew, and the reason given is that the spine has become harder and tougher. It is a common thing to see yew trees standing in grazing fields; no harm seems to follow the few twigs the cattle nibble off, though a barrow load of yew clippings thrown into the field would kill every beast in it.

The "churchyard yew" is a feature of many a quiet God's acre, and the dark-green sombre foliage seems fitting to the office of silent sentinel over all that is left of the generations that have come and gone. There is an inscription on a mossy stone under a great yew in an old world Yorkshire churchyard that expresses a world of pathos in language so quaint that a smile is surely excusable—

"Under this yew tree
Fain would I be,
E'en because Hebe
Lies where she be."

Some Notes on Eelworms.

By PROF. GEO. H. CARPENTER, B.Sc.

SERIOUS damage to garden plants is often caused by eelworms of various species, yet there is apparently much misapprehension as to the nature of these creatures. They are by no means easy to recognise, being far smaller than the small white worms (*Enchytreidae*) of the earthworm group that seem to be often mistaken for them. A length of one twenty-fifth of an inch, or even less, may be the extent of a full-grown eelworm, and in order to study the creatures it is necessary to tease up the tissues of the plants on which they are feeding and examine the *débris* with a microscope. Then the tiny eelworms may be observed passing with active wriggling or looping motion among the fragments.

Eelworms belong to the class Nematoda. They have no trace of segmentation nor of the bristles that characterise the Annelida (or creatures of the earthworm group). The stiff, smooth cuticle of the Nematoda gives them great distinctness and definition of outward form, while the transparency of this cuticle enables the student to see clearly their internal structure. The powerful muscular pharynx (Fig. 2A, *p.*) is always a conspicuous object; this with the gullet is formed by an inpushing of the body wall with its outer skin and cuticle. The intestine (*int.*) is long and flattened; its wall, devoid of any muscular tissue, consists only of a layer of digesting and absorbing cells. Nematoda are usually of separate sexes (in this again contrasting with the hermaphrodite earthworms), and their long, tubular, reproductive organs, with developing germ-cells, can be readily seen through the transparent body-wall. The *vas deferens* of the male (Fig. 1, 2, B, *v. d.*) often provided with hard, sharp spicules (*sp.*) opens far back near the vent of the intestine (*an.*). In the female the vagina (*va.*) is always in front of this position.

The Anguillulidæ or eelworms are Nematoda of small size, with two swellings in the gullet and two equal spicules in the male worm. The mouth is frequently provided with a horny "dart" (*d.*), by means of which food substances are pierced and nourishment is obtained. Eelworms of numerous species swarm in damp

earth, in sea-sand, and elsewhere, feeding for the most part on decaying organic matter. Only a few kinds are injurious to living plants, and in some cases, at least, these require some previous external injury to the plant to enable them to make their way into the soft tissues. For example, Mr. R. Southern,* of the National Museum, Dublin, has lately described a new species of *Rhabditis* (*R. brassicae*) which occurred in enormous numbers in rotten turnips from Co. Westmeath. "When placed in contact with a cut surface," he writes, "they quickly reduce the turnip to a pulp. . . . Attempts to inoculate a turnip through the uninjured epidermis, however, quite failed." Members of the genus *Rhabditis*, however, have no dart in the mouth. The life-history of this species is most remarkable, as instead of males and normal females, the individuals are either males or protandrous hermaphrodites.

The eelworm best known, at least by repute, to cultivators is *Tylenchus devastatrix*, Kühn (Fig. 1). This species attacks a great variety of plants, farm crops like oats, wheat, clover and turnips, and garden produce like onions and hyacinths. In *Tylenchus* both sexes are slender, and elongate throughout life. The mouth is armed with a sharp hollow dart which swells at its hinder end into a trilobed knob. *T. devastatrix* measures only 1 to 1.5 mm. ($\frac{1}{25}$ to $\frac{1}{17}$ inch) in length, with a slender, pointed tail-region. In the male there is a delicate fold of skin on one or both sides of the hind opening, forming a "bursa" (*bu.*); in the female the vagina is usually one-fifth of the body-length in front of the tip of the tail. Such details of structure as these are used for discriminating between the various species of these worms, so that careful micro-

scopical examination is necessary in order to determine them.

These eelworms are found among the scale-leaves and sheathing-leaves of bulbous plants like the hyacinth and onion.* The presence of the worms leads to an excessive growth of the spongy tissue (*parenchyma*) of the plant, the

* E. A. Ormerod, "Report on Observations of Injurious Insects," 1896, p. 107.

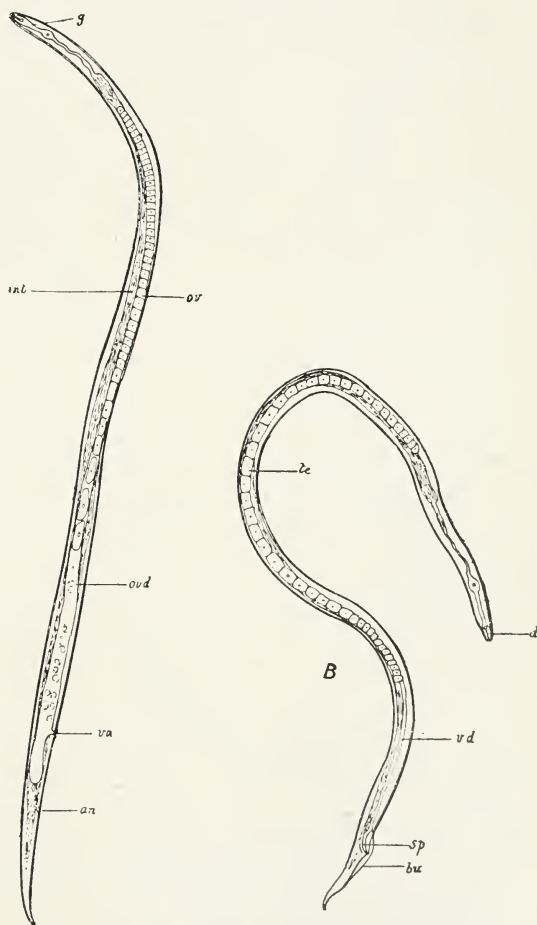


Fig. 1.—STEM EELWORM (*Tylenchus devastatrix*, Kühn).

A—Female: $\times 150$. B—Male: $\times 150$. *an.*—anus; *bu.*—bursa; *d.*—dart; *g.*—gullet; *int.*—intestines; *ov.*—ovary; *ovd.*—oviduct; *te.*—testis; *v.*, *d.*—vas deferens; *va.*—vagina; *sp.*—male spicules.

(From "Economic Proceedings, Royal Dublin Society." Vol. I.).

* *Journ. Econ. Biol.*, vol. iv., 1909, pp. 91, 5, pl. viii.

cells multiplying abnormally, while the growth of the vascular bundles is arrested. Consequently the plants become deformed and shrivelled, the shoots abnormal, and the bulb-

pended animation, from which they are roused when the ground is moistened by rain. From plants which have died and decayed through the injury wrought by them eelworms are constantly

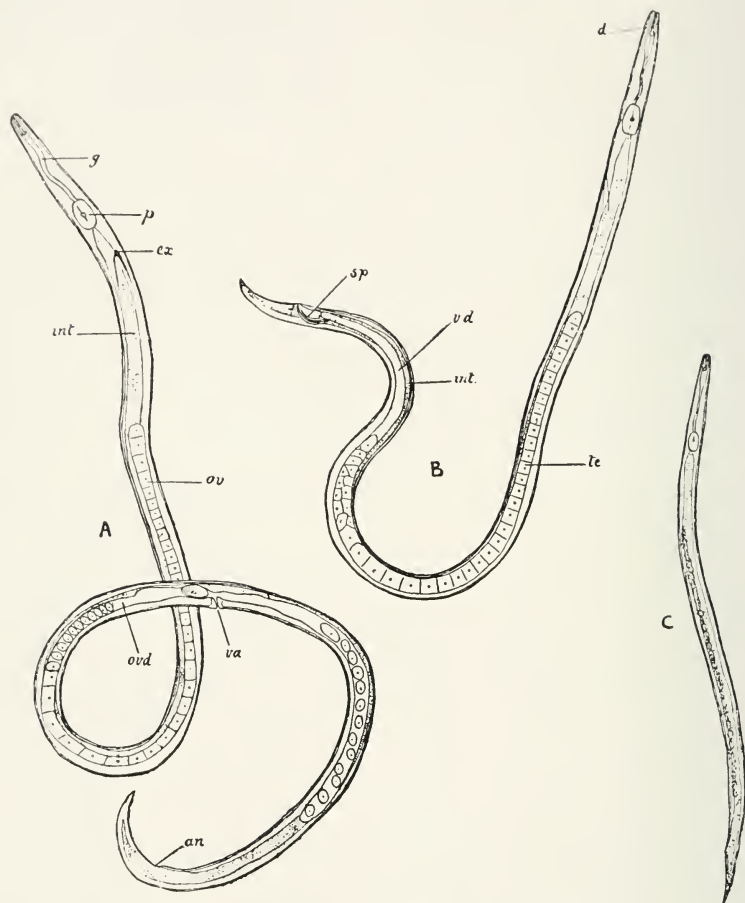


Fig. 2.—STRAWBERRY EELWORM (*Aphelenchus fragariae*) × 360.

A—Female; B—Male; C—Young; *d*.—dart in mouth; *g*.—gullet; *p*.—pharynx; *int*. intestines; *an*. vent; *ov*.—ovary; *ovd*. oviduct; *va*.—vagina; *te*.—testis; *v d*.—vas deferens; *sp*.—spicules; *ex*.—excretory pore.

(From "Economic Proceedings, Royal Dublin Society." Vol. I.)

scales often greatly swollen. It is important to remember that the plants, when small seedlings, become infected by eelworms from the soil, and that young eelworms can live in the soil for more than two years in a state of sus-

passing into the ground. Thus unless the soil be effectively sterilised the mischief is carried on from year to year.

Another species of eelworm has been found rarely in these islands causing a deformation in

strawberry plants; this is *Aphelenchus fragariae*, Ritzema Bos * (Fig. 2). The stems become greatly swollen; the stunted and crowded buds either remain undeveloped, giving the aspect of a small cauliflower, or give rise to monstrous blossoms. The species of *Aphelenchus* are of the same general form as *Tylenchus*, but the intestine here begins immediately behind the swollen pharynx, while the male has no bursa. *Aphelenchus fragariae* is a smaller worm than *Tylenchus devastatrix*, the male measuring only .6 mm. ($\frac{1}{10}$ inch) in length and the female .75 mm. ($\frac{3}{5}$ inch). In the latter sex the vagina (Fig. 2A *va.*) is about a third of the body-length from the tip of the tail. Unlike *Tylenchus devastatrix* which may be found on plants of several distinct families, the present species seems to be confined to the strawberry; it must therefore be probably in all cases introduced with imported plants.

Most remarkable among eelworms is *Heterodera radicola*, Greef, a species often injurious on the Continent to the roots of tomato, cucumber, and other garden plants, but apparently rare in this country. Only last year did Mr. Southern determine the species as Irish, finding numerous specimens in injured tomatoes from Belfast; he kindly allows me to make the fact known in IRISH GARDENING.

In the genus *Heterodera* the young wormlet is elongate like the young *Tylenchus*. After a time, however, it becomes thick and swollen, tapering at the head and with a pointed or rounded tail. The male undergoes a curious transformation, the next stage being elongate and slender again, and remaining for some time coiled up within the cuticle of the preceding

stage. Emerging from this, it is in the adult condition, the tail being bluntly rounded and without a bursa. The female retains, however, the swollen form of the larva, becoming, as growth proceeds, larger and broader until, when adult, she resembles a bladder or lemon in shape. These curious females are found with the head-end buried in the root tissues and the swollen body protruding. The young, which are sometimes hatched within the mother's oviduct, are brought forth in numbers, pass into the soil and thence bore their way into the tender roots. The effect of these worms is to cause gall-

like swellings to appear on the roots. Hence the worm is often known as the 'Root-knot Eelworm.'

Watering with a 5 per cent. mixture of carbolic acid has been recommended, but it is doubtful whether any strength likely to be destructive to the eelworms would not be also injurious to the plants. Irish gardeners may congratulate themselves that this pest is uncommon in their country. As in many similar cases, to be forewarned is to be forearmed. Infested

plants should be ruthlessly burned and every possible care taken against the importation of tainted stock.

* Sorauer's *Handbuch der Pflanzenkrankheiten*, vol. iii., p. 31. Also Ormerod's Report, 1893, p. 99.

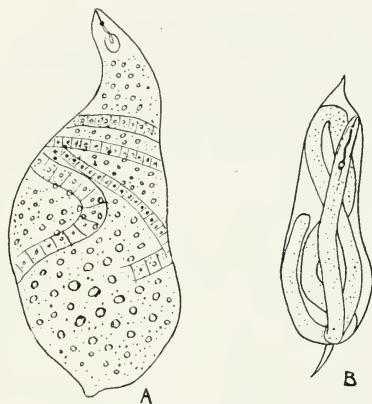


Fig. 3.—ROOT-KNOT EELWORM (*Heterodera radicola*, Greef).

A, Female. B, "Resting stage" of male in larval cuticle. $\times 80$.
[After Sorauer, from Stone and Smith.]

* *Zeitsch. f. Pflanzenkrankheiten*, vol. i., 1901, p. 1. See also E. A. Ormerod's "Report of Observations of Injurious Insects" 1890, p. 126, and G. H. Carpenter in *Econ. Proc. R. Dublin Soc.*, vol. i., p. 338.

THE LATE PROFESSOR HILLHOUSE.—Horticulture has suffered a severe loss in the death of William Hillhouse, M.A., late Professor of Botany at the Birmingham University, at the early age of fifty-five years. Mr. Hillhouse took a great interest in field botany, in forestry, and in gardening. He founded the Bedfordshire Natural History Society, and since his appointment to the professorship of Botany at Mason's College in 1882 identified himself with the progressive activities of the Botanical and Horticultural Society of Birmingham, of which he was honorary secretary. During his tenure of office the new alpine garden was formed and the lily house reconstructed and enlarged. He was born in Bedford and began his active professional career as a schoolmaster.

Zonal Pelargoniums.

By WILLIAM DAVIDSON, The Dell Gardens, Englefield Green, Surrey.

THE crimsons, scarlets, pinks, salmons, and all the intermediate shades of these plants formed a magnificent display on Messrs. Cannell's stand at the Crystal Palace on November 3rd, 1909. The collection came in for a good share of attention, and one is apt to think that the geraniums are not so largely grown as their merits indicate. Nothing could surpass the brilliancy of a group of well grown plants, the dazzling colours being all the more effective in the dark days of winter.

Their value as winter-flowering plants cannot be over estimated, while their culture is very simple. The difference between success and failure lies in attention being paid to small details. In order to cultivate and bloom this class of plants in the winter months it is necessary to observe some simple conditions. A low span-roofed house, facing north and south, provides good quarters for flowering the plants. They require a temperature ranging from 50 degrees to 55 degrees during the day, and at night from 45 degrees to 50 degrees will prove sufficient. Low staging should be provided so that the plants can be looked down upon, otherwise much of their fine appearance is lost. Damp proves very destructive to geraniums. During the winter months the atmosphere in the house must be kept dry. The cuttings should be taken during the latter part of February or early in March. Each cutting should be placed in a small pot in sandy compost, then placed in a gentle heat as near the glass as possible. When rooted pot into three-inch pots and grow on shelves. The young plants must have abundance of light. When the plants have made about four inches of growth it is advisable to pinch out the leading bud. By the beginning of June the plants may be removed to a cold frame until all danger of frost is over, then the pots may be plunged in ashes and the plants exposed to all the sun and air possible. During the summer attention must be paid to repotting and watering, also stopping of branches. The flower buds must be removed until the end of August. Growth must be made steadily, and no check should be given. The wood must be well ripened by

exposure to the sun. This ensures the growth being well matured and short-jointed.

The potting soil at all stages should consist of good loam, with the addition of one-fourth well decayed cow manure, with enough sand to keep the compost open. Pots not larger than 5 inch or 6 inch should be used for final potting. If the plants become pot-bound, watering with artificial manure will prove beneficial. Firm potting is necessary at all times.

Conspicuous at the Crystal Palace were the following single flowered zonal pelargoniums:—Goodwood, white; Caledonia, blush pink; Bombay, rosy red; Dublin, rosy magenta; Lisbon, purple; Mr. J. A. Bell, white and pink; Lady Warwick, white with pink picotee edge; Paris, white and deep pink; Sydney, light rosy pink; Naples, deep scarlet; and London, crimson. Three good semi-double varieties were Chavarri Hermanos, scarlet; King of Denmark, salmon; and Lucie Guichard, pink.

The Evolution of a Flower Plot

By VERONICA.

IT was originally a grass plot about 30 feet square, in reality an extension of the lawn, and separated from the west gable of the house by a wide gravelled path. This path continued along the north side and across a rustic bridge that spanned a stream which ran behind the lawn hedge on the west. On the south side of the plot a short walk led to a summer-house, and here the lawn hedge ended, and its place was taken by tall privet and a fine spreading elder tree, which made a good background for the summer-house.

Later on there were several young apple trees planted, notably a half-standard in the centre. Perhaps it was the mulching necessary to the wellbeing of the trees that made the grass grow rank and weedy; at all events, it was rather an eyesore to me, and I made up my mind to try and improve its appearance. I marked off a border two feet wide on the south side, and after a liberal addition of road grit (obtained from the road-side banks, where it had lain for many years) and manure, planted it with various choice herbaceous and Alpine plants. This partially hid the plot, and soon after I obtained permission to extend my borders along past the west gable, and very well, indeed, they looked. But the encroaching grass behind grew apace, and one species in particular made serious inroads among the flowers. I enquired the name of this (my enemy), as I had never seen such an uncivilised sort of grass before, and was told that it was "couch grass."

Perhaps it was seeing how the flowers grew and flourished, and how really pretty the borders looked, that the owner of the apple trees sometimes cast an appreciative and relenting eye on them. I only know

that one blissful day he suddenly said to me—"Would you like this whole plot of ground for your flowers?" Would I like? when I had simply been longing for more territory to conquer. I joyfully accepted the proposal, and not even the somewhat alarming condition that the central apple tree must remain had power to damp my enthusiasm.

How we planned—and, indeed, that uncompromising square seemed to take more planning than all the rest of the garden put together. When we first took possession of the place there were many changes to be made, but they seemed naturally to suggest themselves, and we had only to fall into line with them. The plot was not large enough for devious walks and undulating borders, so it was decided to take the obnoxious apple tree as the "point of sight," and work up to and around it as simply as possible.

But I was not blind to the possibilities of the place, for was there not a picturesque summer-house standing at the south-west corner, and the high background of elder and privet, with the brook running merrily behind it, while on the north side the path that led to the bridge was bounded by a low, close-cropped privet hedge that shut off the view of the kitchen garden and ended abruptly at the hand-rail of the bridge. The latter was just the width of the path, so that the left hand-rail was on a line with the edge of the plot. The branches of the elder overhung the bridge and clasped hands across the stream with an accommodating laburnum on the other side, while a little farther along a splendid specimen of a lime tree stood.

At the top of the bank, which dropped steeply down to the stream, I had—years before—planted periwinkle, both the green and the variegated sorts, and these now trailed down to the water, while the ground ivy rambled about at will and essayed to climb the trunks of the gnarled old elder.

In the stream is a never-failing supply of water even in the hottest and driest summer, and a waterfall above the bridge made music for listening ears, while in winter at times the stream became a raging torrent. So if my new garden was somewhat limited in space and development I could not complain of the lack of the picturesque in its surroundings.

The removal of the apple trees was the first operation,

and was directed by a wiser head than mine. And then began the task of clearing off the grass and deeply digging the ground.

I haunted that plot all the time of its preparation so as to be ready to pounce on my enemy the "couch grass," lest perchance a root should escape eyes less vigilant than mine and disturb my future peace. And indeed, in spite of all, during the first year of the completed flower beds the grass *did* come up here and there, and everywhere except in the hard and well-made paths, only to be triumphantly uprooted, for conquer it I must—and did. The soil, being stiffish, was liberally mixed with road grit (of the kind before mentioned) and loam.

The next step was to make a large circular bed round

the apple tree, and outside this a walk was made, about two feet wide, and four short paths led outwards at points facing each other, thus dividing the remaining space into four irregular corner beds. All these walks were thoroughly prepared, the soil being removed to the depth of about a foot, a layer of stones placed in the bottom, then cinders trodden down on top, and lastly, a covering of fine gravel, not round gravel,

which was unobtainable, but merely very fine road gravel. The beds were edged with stones from a neighbouring quarry, and were raised a little higher than the paths. The first made borders along the south and east had a wood edging which, being pretty well covered by this time with masses of Alpines and creeping plants, was allowed to remain for the present, save only where it was cut for the intersecting paths.

And then came the fascinating part—arranging and planting the flowers—more difficult than it looked at first sight, as there was neither back nor front to the beds, except at the west side with the trees behind. So the taller plants were kept well to the centre of the beds, not formally planted, however, and the lower-growing and choice creeping plants occupied positions nearer the edges, and drooped over the stones. To give the circular bed the effect of a centre piece I had a thick border of the white-leaved cerastium, as it keeps its looks even in winter when planted in sandy soil but the other edgings were merely clumps and masses grown in quite irregular fashion. Such plants as the sedums and saxifrages. *Lysimachia aurea*, *ajugas* of



A CORNER IN "VERONICA'S" FLOWER PLOT IN JUNE

sorts, *Arabis albidula*, both green and variegated, also lucida, tellima, thrift, dwarf campanulas, *Mimulus cupreus*, and many others soon almost covered the stone edgings.

I had the advantage of a plot with four aspects, so that most plants found a congenial home somewhere, and the greater part of it lay in full sunshine. In the shady corner beside the summer house, *Tropaeolum speciosum* festooned the rustic trellis work, irises flourished in the moist soil, while Solomon's Seal spread its arching fronds around, and primulas, hepatica, and mimulus also found there a congenial spot. The tall plants, like blue delphinium, scarlet lychnis, *Hyacinthus candicans*, and many others, showed up well in front of the trees, while nearer the centre of the beds various perennial poppies, anchusa, pyrethrums, eryngium, day lilies, anemone, and japonica were planted. In the more open beds, such sun-loving plants as pentstemon, phlox, campanulas of sorts, gypsophilla, eschscholtzia, erigeron, tree lupin, aquilegia, coreopsis, and *Geranium endressi* made a good show during the summer months.

Crimson tulips, as well as the pink varieties, were planted in groups, and made a gay note of colour among the many yellow and white spring flowers. But some times, when I look at my *bête noir* standing stiffly in the midst of my flowers, I think of "the eternal fitness of things." Not alone in the Garden of Eden would it seem there was an apple of discord, for here in my small paradise not merely an apple but a whole apple tree remains to disturb my peace. Even with the flowers growing around it its naked stem refuses to be hidden. Hints of a festooning circle of yellow and orange cluster roses, or suggestions of equally decorative schemes, fail to meet with approval, and still the tree stands unadorned, a living monument of man's supremacy and the futility of woman's wishes. But there is sometimes brought to me a propitiatory offering in the form of a rare plant or shrub, so the situation is not entirely without compensations.

In front of the elder tree, whose luxuriant leafage makes an effective screen from the west winds, various small flowering shrubs are planted, while here and across the end of the little path there is a garden seat,

where in my leisure moments I often sit with a book or piece of needlework, in this the best-loved part of the garden, enjoying the beauty and fragrance of my flowers, listening to the cheerful hum of the bees as they flit among the blossoms for the sweets that never fail them.

And I sometimes think if I were obliged to give up some of my most cherished possessions that the last—the very last—I shall ever want to part with will be my garden.

Current Topics.

By C. F. BALL, Royal Botanic Gardens, Glasnevin.

THE heavy snow fall at the end of January has caused a great deal of damage to evergreen and deciduous trees and shrubs, but in places where the shrubs were given a vigorous shake to dislodge the snow the damage is not so serious. Accounts

come to hand of many plants which were killed by the severe frost, though hitherto they had passed safely through many Irish winters; but we must also look on the bright side of things, and consider the good which the snow will do to the ground.

Some of the hardy shrubs which force well are very welcome objects in the months of January and February for indoor decoration. A few of them which take to the forcing

kindly are even more beautiful than when growing outside. For instance, *Lonicera tartarica* forced, has almost glaucous leaves, forming a pretty contrast to its pink flowers. One of the prettiest groups at Kew in the new year used to be forced plants of *Pyrus floribunda* arranged with *Moschosma riparium*. The soft pink of the *Pyrus* blended perfectly with the feathery, spiraea-like flowers of the *Moschosma*, and formed a charming picture. Some of the best shrubs for forcing are *Prunus japonica*, *Spiraea arguta*, *Deutzias*, *Almonds*, *Wistaria* and *Forsythia*. By gentle forcing Solomon's Seal and the German iris can be induced to flower in February, and form together a most pleasing group.

Gumming or gummosis is a well-known danger to fruit trees, familiar to every gardener, though the real cause of the trouble is yet to be solved. In the *Gardeners' Chronicle*, Feb. 5th, 1910, Professor Scott



Photo by]

[F. C. Ball.

THE LILY POND IN BOTANIC GARDENS, GLASNEVIN. FEB., 1910

Elliott, writing on experiments in curing plant diseases, says that Mohrzecki used for the gumming of fruit trees a solution of one per cent. of salicylic acid. An injection into the stem of four litres of this solution sufficed to cure them, the gumming stopped, the wounds healed up, and the trees became healthy and vigorous. Mohrzecki is also said to have cured chlorosis or "yellows" in apples, pears and cherries by injecting into the stem a solution containing twelve grams of iron sulphate. Three weeks after the injection the leaves were perfectly green and healthy to all appearances. Unfortunately the account does not state in what way nearly a gallon of fluid was injected.

Everyone knows how the larch canker (*Peziza*

In March, 1909, of the above publication, Dr. Borthwick describes and illustrates the frost canker of the Menzies spruce, *P. sitchensis*. Frost seems to be the primary cause, followed by some fungus not yet identified.

Picea pungens glauca is one of the most beautiful of the conifers, and makes an ideal plant for a specimen on a lawn, so it will not be welcome news to hear that Dr. Borthwick has found a new fungus, *Curcubitararia picea*, attacking *P. pungens*. The fungus attacks the buds and cortex. Externally it may be recognised by the shoots becoming twisted or the buds not growing, and becoming covered with a dense black sheath.



Photo by]

[F. C. Ball.

SNOW EFFECT, WEEPING BEECH, IN BOTANIC GARDENS, GLASNEVIN.

Wilkommii) has seriously interfered with profitable cultivation of the larch, so two other species of larch were introduced in the hope that they might be less liable to attack if not immune from the disease. These two species were the western larch, *Larix occidentalis*, and the Japanese larch, *L. leptolepis*. These hopes as to the immunity from disease are partly disappointed already, for in "Notes from the Royal Botanic Gardens, Edinburgh," Dr. Borthwick describes how he has found the larch canker on both these species. The Japanese larches attacked were in the Edinburgh Botanic Gardens, and the western larch were seedlings raised in 1904 growing at Murthly Castle from Mr. Elwes seed. The common larch is there proving the quicker grower. *L. occidentalis*, discovered by Douglas in 1826 has never been a well-known tree, but in 1903 Mr. H. J. Elwes secured a supply of seed and distributed it to arboriculturists throughout Britain.

A short time ago an advertisement was inserted in the *Gardeners' Chronicle* for chief officer of the London Parks Department, at a salary of £600 per year. The advertisement stipulated that "a knowledge of surveying, landscape gardening, forestry, and horticulture is desirable." The result is that Major C. H. Enthoven, R.E., has just been appointed, who confesses that surveying is the only subject of the four required in which he has had experience. After advertising for a trained man it seems very unreasonable to select one who has no experience at all in the gardening line. A trained and experienced horticulturist was surely best fitted for the post. Among the 97 candidates who applied were men of proved ability in the management of parks, and in the final three chosen there were two names well known among the superintendents of parks.

Some clue as to how the appointment was made is given in the English *Daily News* for February 9th.

The Chrysanthemum.

III.—Treatment of Cuttings.

IT is not always the strongest-looking cuttings that make the quickest progress in rooting. Beginners getting their stock from nurserymen should not always judge the vigour of the young shoots by the mere look of the cuttings on delivery. For example, I received by post in December last (among others) a 100 cuttings, each of Mrs. Scott and W. Duckham. The former were very small and puny-looking, and the latter of fair size and stout, yet of the two Mrs. Scott made as good an all-round rootage as its apparently more robust companion.

During the very frequent cold nights of the present season it was found necessary to heat the greenhouse sufficiently to at least "keep out the frost." Although it is, perhaps, not altogether essential, yet our aim was not to let the temperature ever fall much below 40° F. during the initial stages of rooting. After the roots were well started in the cuttings inserted during the latter end of December and beginning of January the young plants were removed to an unheated greenhouse, and although there were several frosty nights there were no apparent checks to growth, and now at the latter end of February they present a fine, healthy appearance, and most of the varieties are ready for their first shift into $\frac{3}{4}$ or 4-inch pots. When this is done the plants will be allowed a few days to re-establish themselves before being transferred to a cold frame. The pots will be stood on a layer of sifted coal ashes, keeping the leafy shoots as near to the glass as possible, so as to encourage a sturdy growth.

But to return to the cuttings, temperature is not the only thing to consider. There is the important subject of water. Leafy cuttings are, of course, always losing water by transpiration, and until roots are formed the bare stem inserted in the damp soil has very little power to obtain fresh supplies of moisture to make good the loss. It is, therefore, most essential to devise some means whereby transpiration will be, at least, partially checked until the young roots appear. Our own practice is to thoroughly water the soil after the insertion of the cuttings, and then to place the pots in a box (having first covered the bottom with a layer of fine cinders), and cover them over with a sheet of glass. For the first few days it is advisable to shade them from direct sunlight. Should any appearance of flagging be noticeable a slight overhead sprinkling with water will be sufficient to restore freshness to the foliage. So soon as the shoots show any sign of growth air must be given—a little at first and then gradually more—until, when the roots can apparently cope with the natural loss of water from the foliage, the plants may be removed from the boxes and placed upon the stage as near to the glass as possible. After this give no more "coddling," but plenty of air (not draughts, however), and as much light as possible. When you find that the roots have well fitted the pots the young plants are ready for their first shift. It is, by the way, most interesting to observe the difference in the character of

the root system among the different varieties. The manner of growth may be easily seen by removing the whole mass of soil by inverting the pot and tapping out its contents in one unbroken mass. We have made several drawings of the different types observed, and, perhaps, with the Editor's permission, these may be reproduced in the April issue. The compost used for the first potting may be a little coarser than that used for striking the cuttings. We use—2 parts leaf-mould, 4 parts loam, 1 part sand, 1 part well-rotted manure. The whole to be passed through a half-inch sieve. Some growers recommend bone meal in place of the well-rotted manure, but we have not tried this in the first shift. Care must be taken that the manure is thoroughly well rotted.

N.B.—Cuttings for pompons can be inserted up to March, also cuttings for decorative purposes can still be inserted.

E. A.

Notes from Glasnevin.

Primula Kewensis.

THIS beautiful primula, although a hybrid, being a cross between *P. floribunda*, a native of Arabia, and *P. verticillata*, a native of India, has proved itself to be a good and ornamental greenhouse plant. It flowers about the same time as some of the better known primulas, such as *P. sinensis*, the Chinese primula, *P. obconica*, *P. verticillata*, and others. When *P. Kewensis* was first raised, seed was very scarce, and it was doubtful whether true plants would be got from seed. However, these fears have been removed, and seed producing true plants can now be had. It can also be increased by division, but seed is infinitely more satisfactory. As a decorative plant it will be invaluable, being easily cultivated and having a strong constitution. The flowers are a good yellow, produced freely with the true cowslip perfume, and the foliage is deep green. In this respect it differs from one of its parents (*P. verticillata*), which has light green foliage covered with a mealy white powder. This hybrid seems very fortunately to have acquired only the best qualities of both its parents. The history of this cross is interesting. It originated at Kew—hence its name—where *P. floribunda* and *P. verticillata* are grown for large groups, and when in flower are usually placed side by side. When a pan of seedling of *P. floribunda* was being picked off a strange seedling was observed, which was carefully tended, and eventually proved to be this hybrid. It is a remarkable fact that very few hybrid primulas have been raised by artificial means. Chance hybrids, of which this is one, have been known to occur; but it is curious that good hybrids should not have turned up more often, when one realises the number of establishments, especially in the trade, where the different species of primula are grown in quantities and often under the same roof.

The accompanying photograph is that of another beautiful flowering shrub, *Notospartium Carmichaelia*, which has come to us from New Zealand, and is there known as the "Pink Broom." Last July, in the Glasnevin

gardens, this plant flowered profusely, and was a beautiful mass of pink. The flowers are small, and borne in close, short racemes of about ten to twenty flowers each. The plant is leafless, but the stems are flattened, green, and whip-like. Like the acacias in the seedling state true leaves are produced. This shrub belongs to the Leguminosæ, which, although one of the largest orders of flowering plants, is very thinly represented in New Zealand. *Notospartium Carmichaeliæ* is hardy in most parts of Ireland and round London, but in the colder districts it would require the protection of a wall.

R. M. POLLOCK.

old useless wood and encourage young timber to come to replace the old. Leave a rose tree alone for several years, and note what happens. Good flowers the first year, provided it has been pruned properly; plenty of good growth for the following year—second year plenty of poor-quality blooms—no new growth as compared with first year. In the subsequent year you find flowers have diminished very much, but generally from low down on the old wood a new shoot springs which robs the old wood of most of its vitality, and takes on vigorous growth. In the following year this young rod will give some good flowers until in its own time it will be



Photo by]

[F. C. Ball

NOTOSPARTIUM CARMICHAELIÆ GROWING IN BOTANIC GARDENS, GLASNEVIN

Roses.

By O'DONEL BROWNE, M.D.

PRUNING, tidying up of beds, and giving a liberal treatment of some artificial manure to get the trees into running order will be every rose grower's work during early March. Seeing that the Royal Horticultural Society intend holding a rose show early in July it behoves all intending exhibitors in the exhibition bloom classes to harden their hearts and use their knives and fingers more severely, as you must only tax your trees with few flowers if you require heavy flowers. As a general rule most amateurs are sadly ignorant of the art of pruning—they require quantity and quality from the one tree, and this is just what they cannot have. If you require quantity then quality must go, and *vice versa*. Besides, pruning is a help to a dwarf and standard tree, for by it you remove

robbed. Pruning assists and keeps a rose tree in health, and keeps it in a natural shapely form instead of allowing it to straggle anyhow. Then, again, spores or disease which are found abundantly on old wood are removed every time you prune, and this in itself keeps your tree healthy. There is one fault I find very common in people's gardens with regard to pruning, and this consists of having a tree with a single rod for some distance from the ground, and then various branches from the top. A single rod is a bad foundation for any tree. Treat such a tree by the hard use of the knife, and get several young rods to branch out from as near the ground as possible. Roses that require light pruning are generally the guilty ones in this class, and to obviate this you should always, so to speak, compromise the tendency to this fault by removing completely as much old timber as possible, and prune less severely younger wood. Pruning is a difficult matter, and one which requires an enormous amount of

careful plans to succeed, though by carefully looking to your trees in the following months many errors can be remedied. Should you have pruned your tree too lightly you can rub off some of the weaker shoots, and so get better shoots—shoots which are placed properly and not overcrowding each other like bullocks going to a fair! Not long ago I saw a rose tree which was reputed to have been a grand tree, but which lately had been a bitter disappointment to the owner. Poor tree! no wonder; quality and quantity nearly had rung its death knell, but by pruning the tree carefully I managed to save its eviction. Those readers who are intending to show in Dublin at July show must make up their minds now before they prune. It is no use pruning anyhow, and then in June suddenly deciding to show grand flowers in July. This is one of the greatest causes of disappointment to amateurs, and until they make up their minds that they in March are on the way to the show in July they will never get cups and medals. There must be no half-heartedness—no compromising, all or nothing—which is it to be. For the good of your garden, for the society's good, let it be all. You need not be timid when you come to the tent; ask any other older exhibitor if he can give you a hand to show you the ropes, and believe me he will not deny you his advice or help. When I went to my first show in Dublin it was a pure case of ignorance and despair. Suddenly an old hand offered his advice, with the result that I got first prizes for my two boxes, and *I won a rose friend for life*. Yes, he is a good man in every way, and he made me regard my wins as auspicious, and he developed the love in me for rose growing which lies in many a rose grower's mind latent until it gets brought to life as it was in my own case.

The Month's Work.

Flower Garden and Pleasure Grounds.

By E. KNOWLDIN, F.R.H.S.

THINGS generally, from a superficial view, seem pretty much on a par with our last notes on this subject. A closer look, nevertheless, reveals all sorts of little spears and prominences peeping through, from the simple form of the daffodil that "dares," to the curl with which the tulip comes into the light. As we write, all is chilling, and wet to boot, but the singing of birds has come, and well-rested roots have heard, like our feathered friends, the call of spring. But, to work. Let none be led astray by the notion that a hard winter has cleared off the slugs, or any soothe themselves with the idea it has lessened them one iota. That the slug cannot depredate during frost we admit; but now he arises like a giant refreshed, and primed with the pangs of hunger seeketh what he may devour. Daffodils he won't touch, but the heart of a tulip is savoury meat his soul loveth—the heart, the very heart—and he does the dastardly deed in a mean, despicable way, for whilst one enjoys all the pleasures of anticipation over a well-filled tulip bed—and the pleasures are many—when viewing what "old Jarge" called their "robustiousness" of tops,

90 per cent. of them may be hopelessly riddled through just below the surface. Now is the time for their salvation (the tulips, not the slugs!) Stir around each little shoot as soon as visible with a flattish stick to remove a little soil, encircle each with a little dry soot, and that is sufficient. Where the Dutch hyacinth is employed for bedding it is as well to do likewise. Box edgings, of course, are peremially anathematised for harbouring slugs. That they are not guiltless goes without saying, at the same time they chiefly offer an asylum to the "horny-doriny," the big fellow who carries his house on his back; but in our experience *he* is a gentleman compared with the slimy little wretch not a tenth of his size, and then we have a friend in the thrush to persuade *him*. Still, he is bad enough; and when our good Editor breaks out into poetry, as he did last month on the twenty-second page with—

"The garden I love has a hedge of box,
That's dimly, darkly green,
But it holds . . . " our common foe in flocks,
And he'd best cut it down, I ween,"

tempts us to take the liberty shown in italics. Just the influences of spring, of course, from which the editorial sanctum is not exempt, and even the printer, poor man! must have been a little off his level when changing our Waverly Blue lobelia into "Heavenly Blue" (page 29). But the comet, of course, can account for that!

In the early Dutch tulip and the May flowering tulips, added to the Dutch hyacinths and all the glory of purple and gold in aubretias and alyssum, we get all the form and colour we want without prostituting fair daffodil to the conventionalities of the formal garden. Possibly, it is mortal heresy which the orthodox who cannot leave the daffodil out of their spring programme in the formal garden will deem unpardonable, but we think too much of the daffodil to see it—dare we say it?—so unhappily placed, for there is one glory of the formal flower garden and another of the picturesque pleasure grounds, and it is in the latter place we want them, where, in Wordsworth's words—

"My heart with pleasure always fills, and dances with the daffodils."

And once and for all we cannot dance with daffodils when set out like Mary's garden—

"Silver bells and cockle shells, and daisies all of row."

Again, given a dry soil surface, we must tighten in the frost-loosened wallflowers, and with the back of a small rake leave all decently and in order, for they will need no further attention, and ere the month is out, if judiciously spaced, will have closed up their ranks. Ere leaving the flower garden, we venture to hope our compatriot under glass is preparing a good stock of the handsome-foliaged and gorgeously-flowered cannas, which hold an unique position in the summer display—surely the most accommodating of all tender subjects, as they rest cheek by jowl with the dahlia stools. If he will do that we have a fine heap of dead, ripe cow-manure (in our mind's eye), and some of '08 crop of oak leaves in that delightful stage of semi-decay, the liberal use of which will make the cannas put on flesh, and send up strong spikes of bloom.

"Ten thousand saw I at a glance,
Nodding their heads in sprightly dance."

Thus, daffodils in straying patches on the grass, in informal bays of the shrubberies, stretching away down to the water, as in the People's Gardens, Phoenix Park, or at Straffan, in big, broad sheets, meeting the Liffey, and crossing it to the other side. From mid-March, with obvallaris and princeps, till June, when the gardenia-flowered odoratus closes the season—and it is a long season—we shall enjoy them. What is the secret of the daffodil? It has none, may be said, for it will grow everywhere. That is so. But—and not a small but either - it does not blow everywhere as it blows in some places; at Straffan, for instance, and coupled with that (*per contra*) the example of an acre of lawn where we set a couple of thousand princeps some years since, on the free, gravelly sub-soil of County Dublin, which show the effects of a comparatively dry season by being all but flowerless the following spring, we take it that the daffodil loves a moist footing. The Incomparabilis and Burbidgei sections have proved the best for naturalising under dry sub-soil conditions. We notice, by the way, that Biflorus seems pretty well the only narcissus adapted to continuously-fed pastures, evidence of which was seen a few years ago in the historic Scarva demesne, County Down. There, in constantly-grazed grass, bold tufts of the late-flowering Biflorus were remarkable on the closely-cropped sward.

Returning to the kept grounds, how stately are isolated specimens of Maximus on the grass with their elegant twisted leaves and noble, deep-golden trumpets! The keynote of harmony in naturalising daffodils seems to be not only to keep the species unmixed, but the bold plantings of each out of rivalry, which is fairly easy to do in the sinuous windings of a shrubbery or woodland walk, where at every turn one may come on a distinct feature. Soon we shall look for Montana, wreathing all and sundry it has the chance of clinging to in bridal gaiety. The best, and by far the best, variety of this mountain clematis, glorified with the title of grandiflora, is readily distinguished by its purple bine, intensified in the early stages of growth; and happy the man who has recognised the claim of the red *Montana rubens* as a companion to it. We notice in not a few places of the County Dublin spruce firs, thirty or forty feet high, which are sick to the extent of being so nearly nude as to make any tree-lover ashamed to look at them. Such are capital hosts for *Clematis montana*. For years we have watched the struggle between a neglected pine and a Montana on the Monkstown Road. How the latter has managed to mount to the higher branches from which its ropes depend, as it were, for some thirty feet we do not know, but it has; and to see that poor old pine all a-blowing over its bald head every spring is a revelation in plant gymnastics. We have always found the month of March the best for giving attention to mossy lawns and for general good results, superphosphate the best corrective and stimulant. A good deal, however, lays, as Captain Cuttle would say, in the application of it, an even distribution being essential. There are, of course, lawns which are past redemption, where the finer grasses have been quite ousted by daisies and coarser weeds, and where the drastic treatment of breaking up, thor-

oughly cleaning, with proper firming and levelling, and sowing down in April, is the commonsense course; but apart from that all our greenswards pay for some little kindness at this season after the cruelty of constant mowing. In the cutting down of laurels, where such is contemplated, and can now be done with safety, it will not be forgotten that such will pay for a top-dressing of any fertilising material that can be spared, and a previous light breaking up of the surface will facilitate its assimilation. If the muck barrow could run a little oftener in this direction instead of so persistently to the kitchen garden it would be better for both. We know of more than one old kitchen garden sick to death of the muck doctrine, and pining for the tonic treatment of lime. That, however, is another story, and outside of our province, to which a good deal more attention should be given to our shrubs and ornamental trees in the way of nourishment than they get as a rule, and the few places, as at Dropmore, where the superb coniferæ are annually mulched with good, fat feeding are the exception.

The Fruit Grounds.

By A. BARKER, Carrigoran, Newmarket-on-Fergus,
Co. Clare.

AS a general rule the most important of the winter's work amongst hardy fruits has been got through by the time that March comes round, and the fruit grower may derive a considerable amount of pleasure in contemplating his winter's work of pruning, planting, and digging, &c.; feeling that the heaviest of the winter's work is over, and he may now watch with more or less gratification the early indications of his prospects for the coming fruit season. However, I am afraid that this year the pleasure must, in many cases, be deferred or mingled with a great amount of disappointment at the progress made. The abnormally wet weather of January and February has very much retarded routine work, judging by the weather we have had. Here it has been continually wet and stormy during this period, and at the present time land is in a very sodden condition, and work in garden and field has rarely been so backward as now. We are having "February fill dyke" truly this year (our rainfall is already over three inches for this month). However, a few dry days (being vouchsafed) will dry land and brighten up prospects considerably, and the end of March find all things in a satisfactory condition.

Where digging or any cultivation is unfinished, do not miss any possible opportunities to complete this very important operation, and rather than longer delay get it through "wet or dry." Where basic slag has previously been dug in about fruit trees a dressing of kainit now spread over the land, at the rate of 4 or 5 cwt. to the acre, would be of considerable benefit; the kainit may lay to be covered over by the next hoeing or cultivating that the land may receive. Any of the local manure merchants or agents will supply the kainit, and the cost will ultimately be well repaid in increased yields and better fruit, more especially so where a satisfactory amount of farmyard manure is not available.

If not already done, do not further delay the pruning of fruit trees newly planted, or trees that have been lifted. In the case of newly planted trees, cut away any damaged and weakly wood completely; cut back to two or three eyes other shoots not required for shaping the trees, then shorten the leading shoots to leave about 8 or 9 inches of last year's growth in strong, growing trees, and 2 or 3 inches less in weakly growing trees. On the strong shoots cut back to a side bud, or one pointing outwards; in case of weakly or drooping shoots cut to a bud looking upwards.

As soon as the ground is dry enough look through all newly planted trees, and in case of any that may have been loosened by the wind, trample the ground very firmly to the full width of the hole made when planting, and give extra tramping round the stems; then give all trees either lifted or new planted a mulch of littery or half-decayed manure; this mulching is of great benefit in retaining moisture about the roots and encouraging free and healthy root action. Where it is determined to grow vegetables or other crops between rows of fruit trees, plant only low-growing crops and early potatoes which will not remain long on the land, robbing the roots of fruit trees of their due share of light and sun. The roots of fruit trees require quite as much consideration as the tops, and it is only courting disaster to smother up young or newly-planted fruit trees with vegetables. I have myself seen Champion potatoes, mangels, turnips, &c., planted so thickly amongst young fruit trees, that the trees themselves could hardly be seen at all; then no wonder after a couple of years of bad treatment in this way the trees will only produce poor, hardly saleable fruits, or become an early prey to disease and fungus; and finally it is voted "apple growing doesn't pay."

If gooseberries, currants, and raspberries were treated to a dressing of basic slag as recommended in my January notes, a dressing of kainit applied during showery weather this month, and at the rate of 2 to 3 lbs. per square perch, would be a valuable adjunct to the slag. Strawberries, if not already heavily mulched with farmyard manure or only half manured, may be made to carry heavy crops of fruit, by application of artificial manures, such as a dressing of kainit this month early, and at the rate of 3 lbs. or so to the perch, followed by a dressing of about 1 lb. of nitrate of soda per perch, sprinkled down the side of the rows about the time the fruit is set.

GENERAL REMARKS.—In fruit plots or orchards, fences should be trimmed up; any weak places or gaps filled up by the planting of strong quicks, beech, or of whatever plants the fence is composed. Roads and walks cleared of weeds, repaired, and tidied up to give a neat and clean appearance to the plot. Burn up the trimmings of hedges, any prunings, rubbish, and weeds that may be about; the ashes may be spread on the land and dug in. Label newly planted trees with names in full, or number them, and keep a record of the names with corresponding numbers, and write up a general memorandum of planting, &c., for reference in future. It is also very advisable in case of artificial manures being used to write up an exact account of quantities applied and where, also outlay on same.

The Vegetable Garden.

By WILLIAM TYNDALL.

THE weather for the past month has been so severe that little work could be done in the vegetable garden, except in very favourable localities and on light sandy soils, so that much work that would have been better done earlier will be added on to the normal work to be done during the busy sowing time in the months of March and April. Amateurs and cottagers with strong clay soils to work are almost certain to be late this season in sowing some of their vegetable seeds on account of the very bad weather we have had, and consequently will be inclined to work the soil when too wet. It will be better to wait, even risking lateness in sowing, rather than run the risk of the seeds failing to grow on account of the wet and cold state of the ground. Added to this, working and treading the soil in such a pasty condition will utterly spoil its texture. Cut out the "Calendar of Cultural Operations in the Vegetable Garden," printed on last page of February number of IRISH GARDENING, and keep for reference, so as to save space in naming the several kinds and varieties of vegetables in succeeding issues. All seeds, too, can be ordered at once, and not left till time of sowing. Towards the end of the month all coverings of straw, long manure, &c., used for protecting vegetables during the winter may be removed, gravel walks put in order, and all made neat and tidy, for order and neatness are just as necessary in the vegetable as in the flower garden; yet how often do we find it quite different?

Once the weather becomes favourable and the ground dry and warm, no time must be lost in sowing the various seeds and roots as recommended in calendar last month—on a sheltered border or plot making sowings of cabbage, early broccoli, Brussels sprouts, cauliflower, and leeks, netting the first four kinds immediately the seeds are sown to prevent birds injuring the crop. Make successional sowings of lettuce, spinach, peas, and broad beans; also celery seed on a hotbed for maincrop.

CALCULIFLOWER.—Autumn-sown cauliflowers have suffered very much, damp and frost being chiefly to blame. Winter setting in, too, so early, the plants were in many places not well established before the severe weather was upon them. Carefully harden off by giving plenty of air at first and removing the lights entirely for a couple of weeks before planting out on sheltered sunny border in deeply-dug and heavily-manured ground (for all the Brassica family dearly love manure). The plants raised from seed sown in heat in January will require plenty of air in mild weather to prevent them becoming drawn, and to have them stout and sturdy for planting out next month; a like remark applied to sprouts and lettuces raised in heat and dribbled out into boxes.

CARROTS.—Where a frame on a mild hotbed cannot be given over to raising carrots early in the year, I have often grown good crops on mild hotbeds, and placing on it a temporary frame made of boards 11 inches wide and 1 inch thick, covering the hotbed inside these

boards with about 8 inches of fine sandy soil, sowing the seed 1 inch deep in lines 6 to 9 inches apart. Towards the end of this month a sowing can be made on a warm border of Early Gem (a grand early stump-rooted variety) in lines 1 foot apart.

RADISHES.—These can be raised early in the year in frames on hotbeds, the same way as carrots, and often when carrots are being sown a few seeds of radishes are sown through them, and tender roots can be had fit for pulling before any injury would be done to the carrots through crowding.

ARTICHOKES.—This is a good time to make a planting of Globe artichokes. They should be planted in an open position and in good rich ground that has been deeply trenched and well manured for preference. Secure well-rooted suckers, trim all broken roots and leaves, not severely, as often done, and plant in rows 4 or 5 feet apart, and allow 2 to 3 feet between the plants in the row. If a long succession of artichokes is required a short row should be planted each year, as these will give heads two or three months later than the established plants, and thus give a good succession. No time should be lost in planting Jerusalem artichokes, and though they will grow in any ground and situation, they will repay good cultivation. They are planted in the same manner as the potato, selecting medium sets. Plant in rows 3 feet apart, and allow 1 foot between the tubers. The white variety is best, being much smoother and free from knobs.

SALSAFY.—Another vegetable often grown by amateurs, and useful as a winter vegetable, when clean, straight roots, free from flower stems, are secured. Best grown on ground well manured for a former crop, when no fresh manure is required, which is often the cause of this vegetable (as in parsnips and carrots) forking into several roots, and consequently of little value. Any time during April is soon enough to sow in lines $1\frac{1}{2}$ feet apart.

TURNIPS.—Make a small sowing of Early Milan on a warm border, and protect from birds. This variety is less likely to run to seed from early sowing than any other variety I know.

ASPARAGUS.—If the beds of this highly esteemed vegetable were covered with manure in autumn, remove the straw portion and fork in the manure left. This will allow the young shoots to grow up, and also let in sun and air. Neatly rake over the beds after forking, and keep free of weeds.



NOTE ON SOWING ANNUALS.—Most amateurs sow annuals entirely in a wrong way. They buy a number of packets of seeds, sow them ever too thickly in small clumps, and leave the seedlings to fight out the problem of congestion among themselves. I think we have all seen the result. Annuals should be sown thinly—so thinly that the seedlings should be from half an inch to two inches apart according to the kind. Then as they grow up, and as more room appears to be wanted, still other plants must be ruthlessly destroyed. When mature most annual flowers will, at least, require six to eight inches of space, and some even more, such as sunflowers and larkspurs. Thinning should be done early.

Correspondence.

LABOURERS' COTTAGE GARDENS.

DEAR SIR,—I am much interested in your article in the February number of your paper, on the administration of the Labourers (Ireland) Act, in regard to cottage gardens, &c. I hope you will pursue the matter up, and get public opinion worked up in regard to the administration of the Act. To my mind, the way it is usually being acted upon now is a disgrace to Ireland, especially in regard to the building of the cottages. These buildings are exactly what a building of this kind ought not to be. There are exceptions, thank goodness, but the whole of those that are being put up in my immediate neighbourhood are (1) built so badly that after heavy rains quite new buildings let in any amount of water; you will see this from time to time from complaints made, recorded in the councils' meetings. (2) In the most exposed places there are hardly ever any porches. (3) No weather boarding to protect the pine ends; never the slightest protection from the stormy quarters, so that the very appearance of the house preaches discomfort, and the want of a garden gives a general air of misery to the place. Surely it would be possible to get one or two simple approved cottage plans, and get the buildings put up in these lines and not on the vagaries of any council jobber with an axe to grind. Around Fermoy, Mallow, &c., there are some nice cottages built, that I presume are at about the same cost, and these buildings have a weather boarding and porch. One is reminded on seeing these of Ruskin's dictum, that the useful and the ornamental invariably work together for the benefit of man.

I am entirely in agreement with your most excellent article about labourers' gardens. When one thinks of the lovely cottage gardens you see elsewhere in the British Islands, with, generally speaking, a softer winter climate and more rain through the summer, every sort of garden flower could be grown here with great profusion (from the March daffodils onwards). With young people growing up in many places cut flowers would pay; gooseberries, currants, strawberries, raspberries, and other things could be easily grown. The more fruit young people have the better. Show me a well-kept garden, and I will show you a happy home. If the clergy generally would take up this question of the home as their happy hunting ground they would solve the temperance question more than all the temperance lectures and drink laws of the United Kingdom as regards the country districts. As you say at present the labourer does not utilise the opportunity, and we are reminded at the end of all these centuries that if Adam and Eve were placed in the Garden of Eden to till it, their prototypes in the Irish Adams and Eves of the present day do not carry out the instructions given. There is one thing to be said for them—in those days the friend in human shape did not construct cottages for them to live in.

S. W. COOK.

Greenmount, Ballydehob, Cork.

Miscellaneous.

"The Sweet Pea Annual."

"THE Sweet Pea Annual" for 1910 has just been issued by the National Sweet Pea Society; it is the official organ of that society, and is sent free to all its subscribers. This new issue makes a great advance on all previous numbers, and contains in addition to the annual report of the society, financial statement, and list of last year's prize winners, the society's catalogue of sweet pea names, describing more than 500 varieties of sweet peas, with the names of their raisers or distributors, and date of introduction, and those that have received awards of merit are indicated. This catalogue, which has been compiled with great care, and has been brought up to date, should prove invaluable to all growers and lovers of sweet peas. It also contains a very full report of the Sweet Pea Conference which was held in London in December last, at which important papers were read on "The Imperfect Seeding of Waved Sweet Peas" and "Sweet Pea Names and Naming," by Mr. W. Cuthbertson (of Dobbies) and Mr. W. J. Unwin respectively, followed by very full discussions by most of the leading growers and experts in England. The outings of the society to the Sweet Pea Trial Grounds are also described. There were 350 different varieties or stocks of sweet peas grown in the Trial Grounds at Reading last year. Two visits were made by the Trial Committee, which is composed of experts whose impartiality is unquestioned. Their report gives "awards" to nine varieties, a list of too-much-alike varieties, a selection of the best varieties (in commerce) of each colour, it selects a number of stocks for fresh trial this year, and contains a statement concerning the fixity and purity of the stocks tested. All this should be of the utmost value to growers and seedsmen. The trials will be continued this year, and arrangements have been made for a more extensive and conclusive test of varieties than has been possible hitherto. The society has also appointed a special sub-committee to investigate the various diseases to which sweet peas are liable. The society which carries out such important work as this surely deserves the active support of all who are interested in sweet peas. Its membership is now close upon 1,000, and it is to be hoped that it will receive a large accession of new members this year. The subscription is only 5s. per annum, and all particulars can be obtained from the hon. secretary, Mr. C. H. Curtis, Adelaide Road, Brentford, Middlesex, from whom also "The Annual" can be had, 2s. post free.

A FEW HINTS FOR FLOWER GROWERS.—Those who grow flowers for sale are occasionally much puzzled to know how it happens that colours which have long been popular will sometimes suddenly fall into disfavour, and where good prices have hitherto ruled, the returns drop in a single season to a low ebb. We have been asked repeatedly and for many years past how this comes about; the reply given before¹ must be given again—it is a change of fashion. We allude to this now because many chrysanthemum growers are finding this year that

yellows and bronzes, lately such favourites, are now rather at a discount. Let any grower wishing to search into the causes of this pay a visit to town (or a town) and study for herself the windows or showrooms of high-class house decorators and upholsterers. She will find all furniture covered with chintzes, or other stuff chintz-patterned with white grounds, and running designs of flowers in shades of red, pink, and purple. Most of them are reproductions of old French designs, or Italian or Spanish. Well rooms are papered in the same style, and the consequence is that all the demand in the fashionable houses is for pink and purple flowers. Bronze is anathema in such a room. Some may say this is far-fetched; it is absolute fact. At the present moment there is not nearly enough of these fashionable colours to be had in the flower-markets. Those who are catering for next year should provide plenty of these tints; it will be safe for several years to come. But to be prepared for future changes let the flower-grower remember that the person on whom she should keep an eye is the fashionable *house decorator*.—*Monthly Leaflet, W. A. & H. I. U.*

POTATO ONION.—Potato onions are largely grown in some districts, and should be planted as early in the year as the ground can be got ready for them. They commence to grow early, and are quite hardy. Any kind of soil if deeply trenched and heavily manured in autumn for perference, and then left rough till sowing in January or February, when it can be forked over and levelled. Plant the bulbs singly in rows fifteen inches apart and ten to twelve inches from bulb to bulb. Cover the onions three parts over with soil. When the leaves turn yellow, about the end of June or early in July, the onions may be pulled and dried in the sun for a week, and then stored away for use, either by hanking or put on a dry, airy loft. The end of May it is a good plan to carefully bend or twist down the tops if growing strongly. No sand is required to be placed round the onions. (*Answer to a correspondent*.) W. T.

EIGHTIETH ANNUAL REPORT OF THE ROYAL HORTICULTURAL SOCIETY OF IRELAND, WITH SCHEDULE OF PRIZES, FOR 1910.—The present report is a record of healthy life, good work, and substantial progress, reflecting considerable credit upon the council and its active secretary. The total membership stands at 440. It should stand, however, very much higher, considering the unique service the society now gives to the cause of horticulture and to the development of progressive gardening in this country. A great deal of the anxiety associated with the carrying out of necessarily expensive schemes in relation to shows would be removed if the membership was at all in fair proportion to the population interested in gardening. We invite any of our readers who are non-members to write to the secretary (5 Molesworth Street, Dublin) for a copy of this report, and discover for themselves the work that has been done during the past year and the programme of work arranged for the forthcoming year. Three shows, to be held in Dublin, have been already arranged—viz., a spring show in April, a summer show in July, and an autumn show in August.

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VOLUME V.
No. 50

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

APRIL
1910

Walls for Rock Plants

By R. LLOYD PRAEGER, B.A.

IN building a wall for the growing of rock-plants one of two plans may be adopted, according as we propose to use the *top only* for horticultural purposes or to decorate the *sides* with growing plants.

For the former purpose any existing wall of stone or brick, with vertical sides, may be utilised. If the wall is high a bold treatment

is necessary, as the top is above and far removed from the eye; and the most suitable plants are bold-growing things that like a dry situation, such as irises, red valerian, wall-flower, lavender, helichrysum, and so on, with pinks, aubretias, arabis, &c.,

planted on the edges, to fall over and drape the vertical side of the wall. To prepare the wall for the reception of the plants we must remove the coping, and rebuild it, using rugged, picturesque blocks of stone, arranged so as to form a series of deep pockets which can be filled with a rich humus soil and stony cement mortar to prevent disintegration. The full width of the wall-top should be utilised, and a little extra space may be stolen by allowing the edging stones to

overhang the edge of the wall a few inches. Smaller stones pressed down on the surface of the pockets after planting will help to retain the moisture in the soil, and will tend to keep the plants warm in winter and cool in summer. A wall-top of this kind will, in our moist climate, want watering only during dry spells. Drainage of the pockets is unnecessary unless the wall

is exceptionally well built, the superfluous water finding its way down into the heart of the wall.

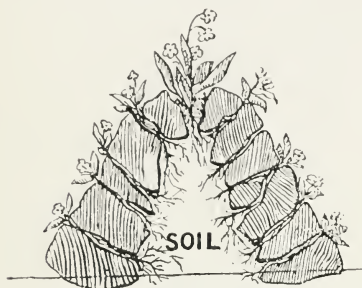
The second method differs essentially from the first in as much as the wall must be built fresh from the bottom; no mortar is required, and the sides



A DRY WALL COVERED WITH ESTABLISHED ROCK PLANTS

must slope towards each other, both to ensure stability and to allow the plants the necessary amount of light and rain. The main problem to be faced in constructing a wall of this kind—apart from stability—is to supply a sufficient core of moist earth for the roots of the plants, and to direct the water which falls as rain into this core; in other words, to avoid the danger of too much drying up. For this reason the wall should not be built too narrow;

for a height of four feet, for instance, a width at bottom of three and a half feet and at top of eighteen inches will not be excessive. Next, we must be careful as to our selection of stones. A flat bottom side to each stone is desirable for the sake of stability and a flat top side so that the rain may not be thrown off but soak inwards, to ensure which every stone should be laid with its top sloping inwards slightly. All the joints between the stones should be as narrow as possible, both to check evaporation, and in the



ROCK WALL SECTION

case of the vertical joints also because we wish to prevent the earth from slowly trickling out and laying bare the roots of the plants. Stones more or less brick-shaped are in fact the ideal; but of course a too great regularity becomes monotonous. Next—and I regard this as important—each plant should be planted as the wall is being built. Thus, and thus only, can we direct its roots far inward towards the core of earth. Bed your stone solidly, pressing it down, then lay on a couple of inches of earth free from stones; now lay down your plant, the crown a little inside the line of the wall, the roots raked as far inwards as they can go, and then lay on your covering stone and press it well down. Tramp the core of earth solid to prevent settlement, and ram every crevice solid.

Of course nice judgment is required as to the selection of plants; the more vigorous growers must occupy the lower portion of the wall, or they will overshadow and kill the smaller or slower-growing species. When the top of the wall is reached it is better not to leave it bare earth, as that allows too much loss of water; it should be rounded off and closed in with wedge-shaped stones with narrow joints be-

tween, well planted with species which can stand drought.

If the wall runs north and south, then each side will receive an equal amount of sun, and no difference need be made between the species used for the two faces. But if it has an east and west trend, with a northerly and a southerly face, a little care must be exercised in planting the south side, and species must be selected capable of withstanding drought, such as succulents (sedums, sempervivums, &c.) and grey-leaved plants (achillæas, artemisias, and so on), and long-rooted species; while on the north side plants which like a little shade, such as mossy saxifrages, will be found to do well.

Nothing remains but to enumerate some plants suitable for dry-wall cultivation. I mention only those which in my own limited experience I have found suitable: others with wider knowledge can no doubt add to these lists.

For the lower part of the wall the following comparatively strong-growing species:—

Achillæa argentea, *Clavennæ*, *Kellereri*, *serbica*, *umbellata*, &c.; *Alyssum saxatile* vars.; *Olympicum*, *podolicum*, &c.; *Arabis albidia* vars.; *aubretioides*, &c.; *Armeria plantaginea*, &c.; *Artemisia argentea*, *Roetzlii*, *sericea*, &c.; *Aubretia* in variety; *Campanula garganica*, *portenschlagiana*, &c.; *Dianthus*, many species; *Helianthemum* in variety; *Hieracium villosum*, *gymnocephalum*, &c.; *Hypericum fragile*, *repens*, &c.; *Iberis*, dwarf sorts like *Little Gem*; *Marrubium sericeum*, *velutinum*; *Onosma* in variety; *Saxifraga Cotyledon*, *Geum* and *umbrosa* vars.; *Thymus*, smaller sorts; *Tunica Saxifraga*; *Veronica cinerea*.

For the upper part, smaller choice things like *Acantholimon* spp.; *Androsace* spp.; *Asperula Athoa*; *Dianthus*, small alpine sorts like *neglectus*; *Draba* spp.; *Erinus alpinus*; *Geranium argenteum*, *cinereum*; *Saxifraga*, the stronger growing *Kabschias*, like *apiculata*, *sancta*, *Elizabethæ*, *coriophylla*, *Rocheliana*, *marginata*, also the neater *Aizoons*, like *pectinata*, *Portæ*, *paradoxa*, *cochlearis*, *lantoscana*, *longifolia*, *splendida*, *Aizoon rosea*, &c.; *Sedum*, all except weedy ones like *album*; for instance, *Ewersi*, *populifolium*, *spatulifolium*, *multiceps*, *Kamtschaticum* and its variegated form, will be found satisfactory; *Sempervivum*, many kinds; *Silene acaulis*.

Show Pelargoniums.

By K. McLEOD BEATON, Carrigoran, Newmarket-on-Fergus, Co. Clare.

CUTTINGS may be put in and struck from March to August. The general time, however, is when the plants have done flowering and require cutting down to form bushy plants for next season; this generally happens from the middle of June to the end of August. The best place to strike the cuttings in is a well-constructed propagating house; but as every one has not such a place they may be successfully propagated in a frame with plenty of ashes (coal ashes) to keep out the worms. Good loam mixed with silver sand forms a good compost for cuttings. Some use small pots, and only place one cutting in each; this, where the cuttings are few and the convenience small, will be suitable enough, and besides it has

this advantage also—the cuttings can be more conveniently potted without causing any injury to the tender roots. On the other hand, if a large quantity is required, the method of placing six or seven cuttings in a five-inch pot will be more suitable and, with care, equally as successful. Fill the desired pots with the prepared loam, not too hard, but sufficient to hold the cuttings firm. The side shoots which have not flowered and are not more than four inches long make the best cuttings. Cut close to the stem with a sharp knife; cut off the bottom leaves, leaving only two of the uppermost. Place the cuttings after they are made round the edge of the prepared pots. When the pots are filled with

cuttings give a gentle watering, and place them in said house or frame; shade them carefully from the sun, reducing the shade gradually; admit little air when the temperature is about fifty degrees. The cuttings must be frequently examined to see if the roots are formed, and as soon as they are two inches long pot them off singly into two-and-half inches or three-inch pots, using good loam, leaf-mould, and silver sand. When they are finished potting off give another gentle watering; replace them in frame or house; renew the shading until fresh roots are formed, and then plenty air to prevent the

young plants being drawn up and spindly. As soon as they have made four leaves, pinch off the top bud to cause them to form bushy plants.

GENERAL CULTURE: THE HOUSE.—Pelargoniums, like all other large families of plants, require a house to themselves; a span roof with glass sides is by far the best, and



Photo by]

[R. Welch

A DRY-BUILT WALL PLANTED WITH ROCK PLANTS

for this satisfactory reason—that the plants in such a house grow on all sides alike, therefore easier to produce fine specimen plants.

All established plants cut down in June and July should be placed in a cold frame. When the buds break give as much water as will reach every good root; gradually give air. When about two inches in length or so, shake the soil from the roots and re-shift into similar or even a smaller sized pot. Place them again in the cold frame, and keep close until the fresh roots are running in the new soil, then give air gradually until at length you expose them entirely to the atmosphere, but avoid cold rains and anything like frost. Those cut down in

August and September will not want repotting until early spring, and from these different successions of bloom may be expected. Through the winter the temperature should never exceed forty-five degrees. In the case of large plants little stopping will be required after re-potting, thinning instead will often be necessary. Hence the old plants generally produce the earliest bloom, as every general stopping of the shoots, as well as every shift given, retards the blooming period.

Current Topics.

By C. F. BALL, Royal Botanic Gardens, Glasnevin.

THIS month is a particularly favourable one for transplanting all kinds of evergreens; for at this time, when growth is commencing and the soil is becoming warmer, the roots start away freely, and there is usually no trouble with the plants, except an occasional watering if the weather is at all dry.

Care is required with choice evergreens of a fair size so as to keep a good ball of soil around the roots. A trench should be dug around the tree or bush, and with a fork the ball can be reduced to a size in accordance with the subject. The soil should be then excavated half way under the ball, and a mat or piece of strong canvas is half-rolled up and packed under the ball, then the tree can be turned on to the mat and the roll uncoiled. The plant is now in the centre of the canvas ready to be lifted on to a truck by two or more men as required. Even in May evergreens are moved when growing most successfully by this means. For very large trees a transplanting machine is required.

The photograph shows a specimen plant about fifteen feet high, of one of our most decorative conifers, named *Picea pungens glauca*. Throughout winter and summer this plant retains its bright glaucous blue needles, rendering it one of the most conspicuous trees in any garden or park. Some trees have been quite disfigured by the attack of a new fungus called *Curcubitarina picea*. The buds are covered by a black sheath made by the fungus, and are eventually killed. In winter the spores are very numerous and distinct; they are brown, torpedo-shaped, and become multicellular by the formation of transverse and longitudinal walls. Up to the present this fungus has only been found on *Picea pungens* and its varieties, but where this tree is grown gardeners should be on the watch. The best way to eradicate the pest would be to cut off all branches badly attacked and all buds which are covered at the apex by the black sheath. Already the fungus has been noticed in several Scotch and in two Irish gardens.

Picea pungens has stiff quadrangular needles with sharp points, and a strong smell when bruised. The terminal needles of the branches project over the buds, protecting them from squirrels, &c.

There are two handsome varieties of this North American tree—*P. pungens Kosteriana*, which is the best approach to blue of all conifers, and *P. pungens pendula glauca*, a beautiful weeping form, but still very scarce.

Probably a short review of some of the best of the

newer hardy shrubs would be of interest, as there is still time to plant them if ordered immediately; many of the choicer subjects are sent out in pots.

A choice shrub which deserves notice is *Viburnum Carlesii* from Korea, of a deciduous nature, with ovate pubescent leaves. In shape and size the flowers are like *Rondeletia*, but of a beautiful soft pink colour and delightfully fragrant, its only drawback is its slow growth in a young state. *Viburnum tomentosum Mariessii* is a moderate sized shrub having tiers of branches producing abundance of white flowers in May. The evergreen *V. rhytidophyllum* was figured in IRISH GARDENING for December, 1909. *V. utile*, with white flowers, and *V. Henryi*, with coral red fruits, are also good.

E. H. Wilson, writing on *Deutzias*, mentions three new Chinese species from which a race of varieties and hybrids will probably be evolved which will even eclipse those raised by Lemoine of Nancy. *Deutzia Wilsoni* has white flowers one inch across, borne in June; *D. globosa* is erect growing, with clusters of small white flowers; *D. Veitchii* is said to be the best of all the family, growing three to five feet high, with deep rosy lilac flowers three-quarters of an inch across.

Hypericum patulum Henryi is a coming favourite. In a sunny position the flowers are produced from August to October.

Ilex Perreyi is one of the most distinct of evergreen hollies from China; in a wild state it is said to grow to twenty or thirty feet high.

Of the smaller growing barberries the pick of all is *Berberis Wilsonae*. This Chinese species bears small yellow flowers, followed by coral red fruits in autumn. *B. diptyophylla*, from Yunnan, is a larger plant, growing to five feet in height; the autumn colour of leaves and red fruit are its strong points. So far we have nothing new among the larger barberries to equal *B. stenophylla*.

Two new *Coneostemes* deserve a place on the rockery, namely—*C. adpressa* and *C. humifusa*, the first deciduous, and the latter evergreen. Three other Chinese species are particularly ornamental in fruit. *C. rugosa Henryi*, *C. applanata* and *C. Franchetii*. Up to the present it appears that the new *C. angustifolia* is overrated and not thoroughly hardy.

Davidia involucreata is a tree which will require patience and time to flower, while *Dacaisnea Fargesii* is more curious than beautiful.

As free-flowering beautiful shrubs, some of Lemoine's hybrid *Philadelphus* can be strongly recommended, as *P. Fantaisie*, *Rosae*, *Avalanche*, and *Mont Blanc*.

For autumn coloration two sumachs are prominent—*Rhus typhina laciniata* is a strong growing species, while *R. sinica* is a moderate grower.

New climbers are numerous, but one of the best additions is *Clematis montana rubens*, a pink counterpart of our old friend, and just as free and good in every way. *C. montana Wilsoni* has larger flowers than the type, but its chief merit lies in flowering in August.

Lonicera tragophylla, with rich yellow flowers in July, is deciduous, while *L. Henryi* is evergreen. Among the vines are many good things, as *Vitis armata Veitchii*, *V. flexuosa major*, *V. flexuosa Wilsoni*, and *V. melgalophylla*. *Vitis Henryi*, though a beautiful climber, is not generally hardy; for two winters it has been killed at Glasnevin.

Flowering Trees and Shrubs.

By J. H. CUMMING, Royal Dublin Society, Ballsbridge.

WITHIN a comparatively recent period one of the weak points in the education of gardeners was the failure to appreciate the importance of arborescent vegetation in the creation of garden scenery, and to obtain a practical acquaintance with the more distinct and beautiful forms. As a result, many fine old gardens now lack the beauty and interest they should possess, and are stocked with trees that are plentiful in the hedgerow and woodland, instead of those of more moderate stature and remarkable for the beauty of their flowers or foliage or elegant growth. Looking back for twenty-five or thirty years, little importance was then attached to the possession of a knowledge of flowering trees or shrubs. With owners of gardens indifferent about trees it was not surprising gardeners were not so interested in them as they should have been, and their knowledge generally did not extend much beyond the commoner kinds. They certainly were seldom encouraged to introduce to gardens under their charge the more rare and expensive kinds. It is in the garden of limited dimensions rather than in the park that trees of special interest and beauty are most wanted. In medium sized places we require individual beauties and a diversity of form and colouring, and therefore trees and shrubs of moderate growth and remarkable for the beauty of their flowers and foliage are especially valuable.

Of late years, with the marked decline in the cultivation of coniferous trees, many of which are ill-adapted for the climate of this country, the interest in our lovely flowering trees and shrubs has been greatly revived. This fact is well exemplified in the numerous enquiries after these subjects and the space devoted to their description and cultivation in the horticultural press.

In turning to the trees and shrubs remarkable for the beauty of their flowers, for the purpose of directing attention to those most worthy of general cultivation in gardens, I find myself beset with difficulties. The number of really beautiful kinds is so large as to render

it impossible to draw up a short list without leaving some unnoticed that are of great beauty. On the other hand, were I to mention all that were deserving of general cultivation the planter with a limited acquaintance with trees and shrubs would be perplexed by the wealth of material at his command. I would in this connection suggest the importance of planters constantly keeping in view the fact that in private gardens of moderate dimensions the selections should be strictly limited to kinds of exceptional excellence. When this is done it would be found an easy matter to add a few additional kinds that come under notice and appear to

to be specially adapted to beautifying the positions available. Planting of flowering shrubs may be made so as to give special effects. For instance, we may plant with the object of getting a strong effect in the spring, in summer, in autumn or in winter; or in a large bed it is quite possible to so combine plantings as to secure something of interest in it at all times of the year. It is very easy to secure bright, spring effects since most of our plants flower in the spring and early summer. It is much more difficult, however, to secure good effects from summer planting, while autumn is scarcer still. Good winter effects are obtained by using plants that have ever-green foliage and striking colours in bark or fruit.

The observant cultivator will understand the reasons for this. The greatest profusion of flowers was during the



Photo by

[C. F. Ball

PICEA PUNGENS GLAUCA IN BOTANIC GARDENS, GLASNEVIN

spring and summer, the kinds giving off their wealth of beauty in the first of the two seasons being the most numerous. Nature gives the tree or shrub its flowers to enable it to bear seeds and reproduce its kind, and she in her wisdom so arranges the seasons of flowering as to allow the seeds in each case sufficient time for attaining their full maturity. In reference to the pruning of flowering shrubs, the best and safest time is immediately after flowering, or when they have shed their leaves. Shrubs give the finest blooms on the well ripened wood of the previous year. Cut out all thin and weak wood, and so encourage a strong and vigorous growth. Shortening back shoots that seem unduly strong is preferable to the clipping all over that some people consider pruning. Where branches are very crowded remove two or three, and this will assist those left to perfect the flower buds. When grown on

walls some are not amenable to very restricted or formal treatment, and it is best to allow the shoots to stand out perhaps 10 or 12 inches when the flowers are earlier and more readily seen.

Where suckers are allowed to grow too freely—say in the case of lilacs—no good purpose is served, as they seldom flower and are very exhausting to the soil. This brings me to say a little about feeding shrubs. All deep digging amongst their roots should be avoided; but a top dressing of decayed leaves or a little manure slightly pointed into the surface of the ground, after they have been planted for some years, is of great advantage. Where time can be spared, during the summer months give some good doses of weak liquid manure, doing this after heavy rain or after the plants have been well watered. Never give manure water when the soil is dry. The benefit of such treatment will be seen in the fine trusses of bloom the following year.

Some may question the wisdom of this for peat-loving plants; but where it is done judiciously and weak enough the improvement will quickly be seen.

Again, the aim is generally to have shrubs and trees as hardy as possible. In the case of tender shrubs a good winter protection is a mulch of leaves, straw, or similar litter, perhaps six inches deep, which will hold the snow and prevent severe freezing. Some shrubs that are stiff in habit are best drawn together and tied in place with soft string, and then wrapped with a covering of hay or straw. Newly transplanted shrubs are often injured the first winter, and special attention should be taken to protect any that show signs of distress. Shrubbery borders as a rule benefit largely with a mulching in winter. Many shrubs that are not killed by a severe winter may be so severely injured and weakened by it that they do not do their best afterwards.

Passing now to the best time to plant, various circumstances must be taken into consideration. Some people recommend buying in autumn and "heeling in" over winter and planting in spring. This is a good plan if the "heeling in" work for winter is well done. If poorly done, there may be great loss under such conditions. Our hardiest shrubs may be transplanted in autumn to good advantage, but those that are somewhat tender should be left until spring.

For the beginner the best time for planting work is early in the spring, although there are quite a large number of plants that do best if moved in autumn, but on account of the poor planting that is liable to be done by those who have not had experience, spring is generally considered the safest time for this work.

In passing under review the species and varieties and directing attention to those especially desirable for gardens in which space can be found for a few of the best only, I shall give only these that are of easy cultivation, moderate in price, and likely to grow and do well in this district.

ARBUTUS.—There are several very beautiful varieties, notably *A. Menziesii*, which is worthy of cultivation for the large panicles of deliciously scented white flowers and peculiar metallic green leaves. Then we have *Unedo Croomei*, with large foliage and reddish pink flowers. *A. Unedo* itself is the well-known strawberry

tree of Ireland. This is a beautiful evergreen shrub. The bright scarlet fruit, resembling a strawberry, is highly ornamental. Generally speaking, the arbutus is hardy, although in inland situations it is sometimes killed to the ground in severe winters, but springing freely from the root the plant soon becomes re-established, and when it gets a few feet high the chances of injury are greatly minimised. Deep, light loam and a fairly warm and sheltered situation would seem to suit the arbutus best. Anyone who has an eastern wall to cover cannot do better than plant *Azara microphylla*. This variety is the only recognised hardy species, and probably the best from an ornamental point of view. It is suitable in mild seaside districts as a standard, but generally it is cultivated as a wall plant, and for which it is peculiarly suitable. The small, dark green, glossy leaves are thickly arranged on nearly straight branches, while the flowers are very fragrant. The azaras are not particular about the quality of soil, and succeed well even in stiffish loam or clay.

Berberis Aquifolium justly ranks as one of the handsomest, most useful, and easily cultivated of all hardy shrubs. The variety is large, and I shall only mention the most popular. Perhaps the best known and most ornamental of the family is *Darwinii*, which flowers in April and May, and often again in the autumn.

B. Stenophylla is one of the handsomest forms in cultivation, the wealth of golden yellow flowers being remarkable, as is also the dark purple berries. It is also very hardy and of the freest growth.

B. Wallichiana is very pretty both in foliage and fruit.

B. Thumberghii is beautiful in late autumn with its crimson foliage. Indeed all the berberis in their autumn colouring are really beautiful and make splendid vase decoration when cut. They will grow almost anywhere and in any class of soil, though preferring a fairly rich loam.

Buddleia Globosa is the variety we see most of in this country. Where it thrives it must be ranked amongst the most beautiful of flowering shrubs. They succeed well in rich moist loam. Some varieties of *ceanothus* are very beautiful as wall plants. *Azures*, though not hardy enough for every situation, is yet sufficiently so to stand unharmed as a wall plant. The flowers, which are borne in large panicles, are bright blue, and produced in July and the following months. In a light dry soil and sunny position this shrub does well and is most ornamental. The variety *Verrucosus* has small glossy foliage with dense clusters of rich blue flowers and a neat habit of growth. It is very beautiful, and a fine example of its suitability as a wall plant may be seen on the east porch of Booterstown church.

A beautiful and distinct shrub that succeeds well in this country is *Choisya ternata*. The evergreen leaves are always fresh and beautiful, while the sweetly-fragrant flowers are produced freely on the apices of last year's wood. On the Continent it is commonly grown as a substitute for the orange. The plant succeeds well in any light, rich soil, and soon grows into a good-sized shrub of four or five feet in height.

Among cotoneasters the variety *Simonsii* is generally considered the best for garden purposes. *Frigida* forms a large shrub with large clusters of white flowers, which are followed by scarlet berries in September.

For rockeries or walls *Horizontalis* is very effective, and should be in every garden. All, or nearly all, the species of cotoneaster are remarkable and highly valued for their showy berries.

Another berried shrub that is worthy of cultivation is *Crataegus pyracantha Ielandi*. It is very distinct with small evergreen leaves; the berries, however, are the principal attraction, and they look charming on a wall. While speaking about thorns I would recommend that the double "scarlet," "pink" and "red" be grown as single specimens on the lawn.

For ornamental planting the brooms are fine subjects. By placing three or five plants in clump fashion their beauty is greatly enhanced. In so far as soil is concerned the brooms are readily accommodated, while either from seeds or cuttings they are easily propagated. The Spanish broom does remarkably well in Ireland. In clumps, or as a single specimen, it is equally useful, flowering as it does from July to September. It grows quickly, but stands the knife well, and can be kept in shape.

An invaluable flowering shrub is the escallonia. *Macrantha* is a general favourite, and succeeds well except in cold, frosty districts. *E. phillipiana* when seen as a standard bush and loaded with its myriads of tiny, white flowers must rank amongst the handsomest members of the family. It is very hardy, and retains its foliage throughout the winter. *E. tangleyense* is similar to the former, except that it has rosy carmine flowers, and also very beautiful. The escallonias are all of very free growth in any light, warm, sandy and well-drained soil, and are readily propagated.

Either as a wall plant or for using in some sheltered corner, and where the branches can spread about at will, *Forsythia suspensa* is a very distinct and handsome shrub, and one that is perfectly hardy and quite indifferent as regards the quality of soil in which it is planted. There are several forms of this pretty shrub, but they do not differ much from the species, and scarcely worth consideration.

In *Fuchsia riccartoni* we have a shrub of great beauty. In this country we may consider it perfectly hardy, and in some favoured districts will attain a height of twelve feet, and then during the flowering period is an object well worth seeing.

Griselinia littoralis is an excellent shrub for the seaside, and will succeed well in stiff soils where many other plants would refuse to grow.

In noticing the hydrangea I shall only mention *Paniculata grandiflora*. It is a magnificent variety, and being perfectly hardy should be extensively planted for ornament. To get the best results cut it down to the base each spring, and thin out the weakest growths. The hydrangeas require a rich, loamy soil, and watering with liquid manure in summer will greatly help the production of large panicles of flowers.

Having regard to their freedom of flowering and wondrous beauty of the magnolias it was matter for surprise that certain of the kinds were not met with in the gardens of all classes instead of being sparingly represented in those of a few only. We have no trees, hardy or otherwise, more beautiful than either *Magnolia conspicua* or *M. soulangeana* and well-developed specimens bearing thousands of lily-like flowers were

startling in their effectiveness. The flowers of the former are pure white and of the latter pale rose pink. They like a deep strong loam, if somewhat peaty so much the better.

As a late summer flowering shrub *Olearia haastii* is of special value, the daisy-like white blossoms being produced in large and flat clusters at the branch tips. The leaves are neat, and, being evergreen, lend an additional charm to the shrub. *O. dentata* is scarcely so hardy, but where it succeeds is a good form, having large, holly-like leaves, and produces dense white heads of flowers in June and July.

The *Philadelphus* are a valuable genus of shrubs, all being remarkable for the abundance of white and usually sweet-scented flowers which they produce. They require no special treatment, few soils, if at all free and rich, coming amiss to them, and as shrubs for shady situations they are not to be despised.

P. coronarius aureo-variegatus is one of the numerous forms of this shrub, having brightly tinted, golden foliage and is an extremely pretty and distinct variety.

Before closing I should like to say how very beautiful were some of the ornamental plums. Flowering as most do in the early months of the year the foliage when developed was also attractive. I shall only mention one variety that many consider the best of all the plums—namely, *P. triloba*. It is one of the first to flower, and as a lawn shrub has few equals, the blossoms remaining good for fully a fortnight.

Magnificent effects can be produced by the hardy rhododendrons, azaleas, weigelas, ribes, spiræas, but as already noted in this paper, growers can add to their collections by observing what is likely to suit their several gardens from time to time as opportunity offers.

Gardening and Health.

IN the current number of the *British Health Review* Miss Helen G. Nussey has a vigorous article on "French Gardening as a 'Health Resort.'"

Speaking of the difference in mode of life between the present and the past, Miss Nussey exclaims:—"We read the tales of the men of old—of their vigour bubbling over to such a degree that they were obliged to let off their superfluous energy by raiding their neighbours and pillaging peaceful villages, their endurance and their iron nerves (think of the way they bore torture and blithely doomed others to torture!), and while criticising the channels in which their activities flowed, we, in this anæmic age, long for a little of the vitality which animated them. Life to them was exuberance—to us it is effort."

Further on, comparing the conditions of life and labour between the indoor worker and the open-air activities of the gardener, Miss Nussey declares:—"Yet Nature is all the time helping us to be strong in spite of ourselves. Weak human nature would shrink back before her buffets—it prefers to be comfortable indoors, but the gardener is kept at it, and she compensates him amply. We, as gardeners, cannot afford to stay in bed for a week on end with a cold as the world

around us seems to be doing, but then, as gardeners, we do not get colds. We cannot throw up work to go in for a rest cure necessitated by business and other worries, but fortunately for us, though we are not exempt from our full share of these obstacles in the way of good temper, we remain absurdly optimistic and happy. A useful philosophy born of the healthy breezes among which he lives carries the gardener through. He will do the utmost that he can and not waste his nerve force by vexing himself about what he cannot do. When others are shivering over a fire he is out and about glowing with health and warmth. He has got to face the weather, and in time the weather ceases to make him its shuttlecock, and though he lives in closer contact with the elements than anyone else except a sailor, it is seldom from this quarter that complaints about the weather come. True, he may lament lack of sunshine or want of water, but his solicitude is for his plants, not for himself, and perhaps this is one of the great secrets of his health—his thoughts are turned outwards not inwards. There is no opening for brooding in his existence. If he would succeed he must be up and doing, and it is in the doing that he finds his salvation."

Lady Gardeners.

WITH the spirit of independence which so strongly characterises the women of the twentieth century has arisen the demand for ways and means to satisfy the desires of the most self-reliant amongst them. So rapidly is this spirit spreading that now we find women competing for, obtaining and holding positions which fifty years ago were almost entirely limited to men; amongst such positions may be mentioned those held by gardeners.

Nowadays many capable and energetic girls are turning their attention towards this sphere of work, and are adopting it as a means of livelihood. It is a calling that would not perhaps have suited our grandmothers, who generally belonged to what might be called a "hot-house" species of humanity, but the great number of athletic girls that we meet in this age could find nothing more admirably suited to their temperaments than this exhilarating out-door life. Some girls are afraid to undertake gardening work, because they think their physical strength is not equal to the demand it would make upon them. A girl, however, does not need to be of Herculean strength to carry on this work successfully. Instead of weakening the constitution it is a calling that tends largely to strengthen it. This in itself is one of the highest recommendations, and one of which few other professions can boast.

It is a great mistake to think that gardening coarsens a girl, either physically or mentally. How could the idea be entertained by any one that coming into close contact with the most natural productions of the universe could in any way impair any person? Besides certain qualifications which are necessarily obtained through study and a knowledge of practical work, there are some other innate qualities essential in a girl beginning this work. She must have unlimited patience and the power of endurance, for in gardening there are many hardships as well as pleasures. She must also be taste-

ful and amiable; especially are these qualifications necessary in places where men are employed, for as yet they are the acknowledged masters of the art, and are prone to regard their lady co-operators as mere amateurs in the work. Time, however, is regarded as the surest and keenest test of all things, and judging from the strenuous efforts which many girls are making to reach a state of perfection in this field of labour, it will undoubtedly reveal to us many successes gained by those of them who are directing their attention towards this sphere of work. E. H. M.



THE CAPE LILY (*Crinum*) is one of the "noblest races of garden plants." There is quite a number of species and varieties. They are usually treated as greenhouse plants, but, so long as they are deeply placed, are quite hardy planted outside a greenhouse or against a south wall. The flowers are of immense size (white, pink, or crimson coloured), and are carried several together on tall stout spikes. There is a very fine Japanese species (*C. asiaticum*), known as the "Spider Lady." It is furnished with very handsome foliage, grows about five feet high and produces a many-flowered umbel of white flowers. Bulbs can be purchased for about two shillings each. Bulbs of longifolium (flower flushed with pink) may be had at about sixpence each.

FERNS.—No garden is complete without ferns. Many bare and ugly spots may be covered with their delightful greenery. Even walls may be used as habitats for the dwarf Alpine forms, such as Wall Rue (*Asplenium rutamuraria*) and black and green Spleenworts. The common male fern is a vigorous grower and really handsome, and if rarer would be much sought after for decorative purposes in artistic gardening.

SUNFLOWERS.—The "seeds" of these plants are greatly relished by poultry, and are much used by fanciers as a special food for show birds. The seeds are rich in oil, and form a valuable addition to the food list of the poultry yard. Sunflowers are therefore well worth growing, apart from their striking appearance when in flower. The Russian variety is the best to plant. A deeply trenched soil, well manured, and a sunny aspect are the favouring conditions for success.

NARCISSUS MADAME PLEMP.—This is a noble flower of great substance, with large yellow-fringed trumpet and white perianth; it makes a magnificent pot plant. The bulbs should be potted up as early as they can be obtained in the autumn. To grow them well there should only be three bulbs put in an eight inch pot. Pot them in a compost composed of three parts loam, one part of two-year old dung, well blended. After potting, if the compost is dry, give them a watering, then stand the pots on a bottom of coal ashes, and cover the pots to a depth of six inches with coal ashes or sand. When they have made about one inch of growth remove them to a house where there is a little fire heat. Give them plenty of water. When they begin to grow freely, after flowering is over, plant them out in some border, as the same bulbs will not flower a second year in pots. Anyone following these condensed remarks can easily grow them. J. DEVINE.

A Serious Disease of Beans.

By G. H. PETHYBRIDGE, PH.D., B.SC.

IN passing a fruiterer's shop in Dublin last autumn my attention was attracted by some beans which were exposed for sale, but which were rather curiously marked with more or less circular black spots. On obtaining some of them and examining them more closely it was found that these spots were somewhat depressed, blackened areas of the bean pod, shallow circular pits in fact, with rather lighter coloured margins. In the bottoms of these pits small pustules were to be seen of a rather dirty white colour, and the general appearance of the pods is well illustrated in the accompanying photograph of two of them.

It was easy to diagnose the trouble as the Bean Anthracnose, caused by a parasitic fungus rejoicing in the long name of *Colletotrichum Lindemuthianum* Briosi et Cavara (= *Gloeosporium Lindemuthianum* Sacc. et Magn.). The ravages of this fungoid pest have been the subject of investigations for a considerable number of years, commencing with the earliest studies of the fungus made by Frank in Germany in 1883. Latterly a good deal of attention has been paid to it in the United States of America, particularly by Whetzel, of the Cornell University Agricultural Experiment Station. Bulletin No. 255, issued by this Station in May, 1908, contains a well illustrated account of the disease, and reference should be made to it by those who desire fuller details on the matter.

The object of this note is to call attention particularly to two points in connection with this disease. The first is its serious nature. In certain seasons, particularly rainy ones, the attack may be so severe as to destroy the whole bean crop, and recognising the seriousness of the disease the authorities of the above-named Station have considered it necessary to detail a special assistant to devote a large part of his time during a period of three or more years to investigations upon it.

The second point is that this disease is one of those comparatively rare ones in which infection is carried from one season to the next and from one locality to

another by means of seed. The fungus forms its characteristic canker-spots on any part of the bean plant above ground, but of course is most destructive when it attacks the pods, as it usually does to an extent greater than that of any other part of the plant. From the pods the infection spreads to the seeds within them, for the fungus mycelium grows through the wall of the pod and the skin of the young bean seed, and then reaches the cotyledons of the embryo bean plant, where it lies dormant during the period of rest of the seed.

Such infected seed may be recognised, especially on white beans, by the rusty red spots of varying sizes on the seeds; on coloured seeds, however, this is a matter of much greater difficulty. When infected seed germinates the cotyledons of course come above ground, and from the fungus spots on them spores are liberated in abundance, which carry infection to all parts of the plant. It has been found in practice that hand picking the seed and removing the diseased ones is not a sufficient means of eradicating the disease, or even of partially controlling it. Presumably by this method seeds which are only slightly diseased may easily be overlooked, and moreover there is always the possibility of the spores of the disease being carried over to the next season by mechanically adhering to the surface of even healthy seed which has been in contact with diseased seed. Further, experiments carried on over three seasons to test the efficacy of spraying the growing plants with



Photo by]

[G. H. Pethybridge

BEANS SHOWING ANTHRACNOSE DISEASE

Bordeaux mixture have shown that this method of control is not effectual. Nor has treatment of affected seed with fungicides been of any avail, for when attacked the seeds contain the fungus *within* their tissues, and no mere external application of a fungicide can be expected to reach the seat of trouble without injury to the seed itself. The only satisfactory method of obtaining clean seed seems to be to select it exclusively from those pods which are absolutely free from fungus spots. Gardeners should carefully examine any seeds of French or kidney beans which they propose to sow, and samples showing any seeds with rusty or brownish spots on them should not be used for fear of introducing this pest into Irish gardens.

Roses.

By O'DONEL BROWNE, M.D.

AT last there is something definite to be done in one's rose garden, and let us hope that nothing will come now in the way of adverse weather to further harass the poor rosarian. I cannot understand why everyone will sympathise with a rosarian when they hear of bad luck attending him—is it kindness or do they want to pull your leg? They need not pull your leg—if they want to pull anything let them visit their own rose garden, and depend upon it they will find plenty to pull up. But what is left must be extra well cared for now, seeing that the growth is commencing. All pruning should have finished, and now let us attend to what we have left. A good top-dressing should be put on—not stable manure, but some artificial to get your trees under weigh. Any of the seed merchants can give you their own infallible mixture, but beware of dosing newly-planted trees with it. Wait until June or July for these, but let old established trees get a good share, avoiding varieties like the *Cochets*, *Caroline Testout*, *La France*, and any other variety which you have noticed in previous years to have shown a disinclination to be "stuffed." You can sicken a rose with manure. It seems early to talk of rubbing out shoots yet, but some good authorities say that it cannot be done too early. About the end of April is generally time enough, but it should be done by degrees and not all at once. First remove any ingrowing shoots—i.e., those which point to the centre of your tree—and then any which will cross when produced. Nothing looks worse than two or three shoots crossing and rubbing each other. Keep your eye out for our old enemy the worm in the bud; he has come and has already stopped two shoots on my namesake. If you get a brownish patch of dust on the top of a pushing bud rest assured he is there. Dig him out, crush him, and remove that bud. Now you will see why I said above not to be too hasty in removing your young shoots. Our enemy is keeping you in his own polite way. Why he should select young maiden standards for preference is another query I wish some one would answer for me. Can it be that the tortrix moth has a preference to fly at standard height? Dwarf maidens are rarely attacked; I do not remember ever having seen one. It is a pity that the grub is not found in the dwarf in preference to the standard, as staved or pinched back dwarfs make finer plants and give more flowers. Let your hoe be constantly used, especially as soon after rain as the soil will let you, and when your foliage begins to form look out carefully every day for the leaf-roller maggot and greenfly. Special attention should be given to roses on walls, as these are more prone to be attacked owing, I take it, to more wood of last year being retained than on dwarf-pruned plants. "Abol" or any of the standard greenfly mixtures applied early for a day or so on appearance of the coming host may save you much worry. Learn to get your pest early when it is yet weak, and your trouble will be minimised. A little careful study every day will come easier than spurts and starts.

Perpetual Flowering Carnations.

WE have received a copy of the "Carnation Year Book for 1910," issued by the Perpetual Flowering Carnation Society. It is full of information, and will be perused with great interest by all carnation growers. It contains, in addition to the annual report and other business matters, a number of authoritative articles on the history, culture, decorative value and hybridization of perpetual flowering carnations by leading members of the society. We take the liberty of reproducing one of the shorter articles entitled "Hints on the Culture of the Perpetual Flowering Carnation," by Mr. C. H. Taudevin of Cheltenham:—

As space at my disposal is very limited I propose to give only those details which I deem to be of greatest importance, therefore I will pass over the propagation and go immediately to the treatment of plants as usually received from nurserymen.

POTTING AND SOIL.—Assuming that the reader has purchased in early spring a collection of bushy, dwarf carnations in 3-inch pots, these he should immediately pot on into 5 or 6-inch pots, according to individual strength, making sure that the plants have received a good watering 12 hours previously. This remark applies to every stage of potting on.

The nature of the soil for this operation is of considerable importance, yet I am inclined to think that almost any garden soil can be made suitable, provided judgment and forethought are used. At Hatherley I have the misfortune to work with the heaviest clay soil in Gloucestershire, with which, however, I get very good results.

My method of treatment is as follows:—Three parts (barrow or cart-loads) of this heavy garden soil to one of well decayed stable manure, one of burnt soil, and when possible one of sandy soil. To this is added fine cut bone manure in the proportion of one bucketful to each cubic yard of soil; this heap is turned at frequent intervals, especially during frosty weather, the soil is allowed to mature for 12 months, and if turning has been properly carried out, there will be little fear of "wire-worms" or any other pests. Here I would mention that the compost should not be handled or carted when it is in a wet state.

At the time of potting, to each barrow-load is added one 5-in. pot of old soot, 1 oz. fine salt, and about 2 oz. air-slaked lime. This receives two good turns on the bench.

I have given particular emphasis to the above matter as many gardeners are under the impression that expensive loams and turfs are the only mediums suitable for the successful cultivation of perennials.

SUMMER TREATMENT.—The best position during summer is a well ventilated frame in a sunny position, where the lights can be taken off on all favourable occasions. I strongly advocate keeping carnations covered during rainy weather or very dewy nights, for experience proves that if exposed too freely to these elements, disease is likely to set in. Insects are kept at bay during growing-on period by an occasional spray of nicotine,

The operation of stopping is often a puzzle to the average amateur. The two main reasons for stopping are, first, to regulate the time of blooming; second, to cause the plant to make a bushy specimen. For example, take a collection of plants just potted into 5 or 6-inch pots, these if not stopped would run to bloom in from 10 to 15 weeks time, and keep on blooming more or less freely as long as kept in health. On the other hand if they are to be grown on as specimens for autumn and winter flowering it will be advisable to start stopping directly the plants become established in 5-in. or 6-in. pots.

My method of procedure is as follows:—Every few days I examine the plants and stop those shoots that have run to more than 4 to 6 pairs of leaves, snapping them off to the fourth or sixth joint according to variety. More than one shoot should never, however, be stopped on any individual plant on the same day. If this is observed, an irregular break of new shoots appear, and consequently a more regular succession of bloom in the future.

As the pots become well filled with roots, pot on into 7-in. pots, which in most cases will be the final size. In any case potting-on and stopping should be discontinued by the end of July. Experience has taught me that moderately pot bound plants give the best results in bloom.

If possible all plants should be in their flowering quarters by the end of August. A good fumigation will be necessary on the first still night, following this up once each week for three weeks, and the result will be clean plants through the winter.

FEEDING.—Wherever plants are robust and healthy and pots well filled with roots, resort to weak liquid manure. For this take as follows:—One peck of hen, cow, horse or sheep manure to one peck of soot, tie this up in a bag and put to soak 12 hours before use. There are many other methods of manuring, but space forbids me mentioning them.

WATERING.—This is a point to be specially noted. Either a very dry or a sodden state will cause quantities of burst calyces. Always strive to strike the happy medium.

In conclusion let me urge my readers to be thorough,

as no plant responds more readily to careful treatment, and gives such a wealth of bloom as the perpetual flowering carnation.

Aloe Arborea.

THE accompanying illustration is taken from a photograph sent to us by Mrs. Rambaut, Templeville, Killiney, Co. Dublin, who states that the plant is twenty-one years old, and is now about to flower for the first time. This plant is not to be confounded with the American aloe or Century plant, which is really not an aloe at all but an agave. Aloes are allied to lilies and agaves to crinums. Aloes are mostly Cape plants found especially on the dry Karoo desert. The leaves, as shown in the photograph, are borne in dense rosettes at the ends of the branches, and are usually very fleshy and covered with a waxy bloom. A drug is obtained from the sap of the leaves.



ALOE ARBOREA

Grown by Mrs. Rambaut, Killiney

its yellow bark. One of the most useful is *C. alba*, a North American species, with reddish stem and white berries, and its variety *Spathii*, with golden foliage, especially beautiful in spring. *Cornus mas* is the Cornelian cherry, and is a beautiful dogwood, some varieties of which have variegated foliage, very effective in lawns.

✿ ✿ ✿
If the oak's before the ash,
Then you'll only get a splash;
If the ash precedes the oak,
Then you may expect a soak.

Celery Leaf Spot.

A FUNGOID DISEASE TRANSMITTED BY SEED.

IN another part of this issue will be found a note dealing with the anthracnose disease of the bean which is transmitted by the seed. In this connection it may not be out of place to call attention to another case of disease transmission by means of seed which has only quite recently been established.

During the last few years we have received a number of complaints regarding the celery leaf spot disease caused by the fungus, *Septoria P. trosselini* Desm. var. *Apil* Briosi et Cavara. An important article on this disease has just been published by Klebahn,* in which he shows amongst other things that the fructifications of the fungus are to be found on the "seed" (botanically the "mericarp") of the celery plant, in one case as much as seven per cent. of the "seed" being thus affected. It would be well if gardeners who have been troubled with this pest would examine their seed very carefully before sowing it, or perhaps better still, send up a convenient sample of it for expert examination.

G. H. P.

* H. Klebahn—"Krankheiten des Sellerie"—Zeitsch. f. Pflanzenkrankheiten, Bd. xx. Heft. I. Jan. 1910.

The Chrysanthemum.

IV.—Treatment of Rooted Cuttings.

MUCH care and constant attention is necessary to the successful growing of chrysanthemums.

Each plant must be looked at at least once a day. Watering must not be done indiscriminately, but in proportion to each plant's needs, and not after three o'clock in the afternoon. To secure healthy and forward plants avoid all checks. Be on the look out for frosts, and if there is sign of heavy frost cover the glass with mats. Watch for slugs, and have the ashes upon which the pots stand liberally covered with soot; but even so, a careful watch must be kept. In wet weather, when the frames have been kept close, signs of mildew often appear. This must be seen to at once. Remove the lights as soon as possible, and dust well both sides of the leaves with flower of sulphur. This trouble is more often experienced in striking cuttings; treat in the same way. Another thing to be on the look out for is greenfly. These little pests will be found in the unfolding leaves, and will rapidly spread unless got rid of by fumigating. Another effective method is tobacco dust sprinkled over the affected parts at night, and syringed off in the morning.

Rust or mould is a fungus due to overcrowding. It comes mostly in wet seasons, and appear as black spots on the leaves, spreading rapidly. The only preventative and cure is to give the plants plenty of air and room. The young plants should be kept as hardy as possible, and during the day-time, when there is no rain and it is not too cold, the lights should be taken quite off, so that the plants may get plenty of air. Those at the back of frame should be raised as near the glass as possible.

It is very disappointing when a promising young plant breaks into bud (this is because the cutting was taken from the stem of the plant). This bud must be pinched out at once. Such a plant would be of no use for exhibition purposes, as there can be no means of timing the buds.

Plants rooted at beginning of year should be ready for pinching by now, and will be about six inches high. This method is only used for plants required for decorative purposes. In pinching, the growing point is nipped out, and three side shoots allowed to grow. Early in this month the plants will be ready for shifting into six-inch pots. The soil may be heavier and coarser than in the last potting, and should be chiefly composed of good fibrous loam, four parts, one part leaf mould, one part mortar rubbish, one part rotten manure, and one part wood ash.

After re-potting it is better not to water for a few days till the plant is established, but sprinkle the leaves of the plants once or twice during the day. Some growers shade their plants during this period. It is any way advisable to keep them close for a day or so after the shift.



NITRIFICATION IN SOILS.—One of the most important, if not the most important factor in maintaining fertility in soils is, that the natural process of nitrification is encouraged by the cultivator. The formation of nitrates is brought about through the vital action of particular kinds of germs that alter the ammonia compounds produced by the decomposition of organic matter present in the soil. How can the gardener encourage nitrification? He can encourage it by making the soil conditions as favourable as possible to the vigorous working of the nitrifying bacteria. First, these living germs require food. As their chief food is derived from organic matter, the soil must contain a sufficiency of humus. Then the soil must be kept moist, but not in the very least degree water-logged, because as a third condition the soil must be kept well aerated, as these nitrifying organisms must be well supplied with air containing oxygen, seeing that the process of nitrification is essentially a process of oxidation. Drainage and persistent hoeing are, therefore, primary conditions of success. A still further condition is the presence of some alkali to neutralise the nitric acid formed by the bacteria, and lime is the best and most convenient substance to apply. Lastly, as a summer temperature is most favouring to the growth and development of these nitrifying bacteria, gardeners should endeavour to see to it that all these soil conditions obtain throughout the whole growing season. Furthermore, it is well to remember that the conditions that favour nitrification are precisely the conditions that are best for the health and development of crops.

HEDGES OF SWEET BRIAR.—Can anything be prettier than a hedge of sweet briar in flower or fruit? To make one use the Penzance briar and plant one foot apart in well-trenched and manure ground. Prune back the first year. They will afterwards grow five or six feet high.

The Month's Work.

Flower Garden and Pleasure Grounds.

By E. KNOWLDIN, F.R.H.S.

WE have now two months of beauty before us in the flower garden proper, during which time the tastefully-planned and well-planted spring bedding is so satisfying that we are apt to draw invidious comparison with it and the summer bedding. Any inclined to disagree with us must surely have gone wrong in not availing themselves of the wealth of beauty provided in such easily managed, hardy plants as *Alyssum saxatile*, various aubretias, arabis, hybrid primroses in assorted colours, scarlet and white double daisies, forget-me-nots in royal blue, the earlier flowering violas, with wallflowers and August-sown silenes and saponarias; the lesser things forming massive frames, or maybe groundwork, for the most satisfactory of all bedding bulbs, the tulips.

In view of the labour attached to double cropping of flower gardens—viz., summer planting and autumn planting for spring—the compromise of leaving permanent borderings of hardy things is worth recognition. Where this can be done with not only no sacrifice of effect but positive gain, we are surprised that greater advantage is not taken of it. For instance, we know of nothing finer at this season than a massive bordering to substantial beds of *Alyssum saxatile* providing a golden frame for the red wallflower, or the rich-hued aubretias, or similar things, as a framework to beds, especially beds on the greensward. And where such are left permanently, with replanting of these subjects when such is actually necessary, say every four or five years, we find the subdued tones of colour through the summer rather an advantage than otherwise, when judiciously contrasted with the brilliancy of begonias or of bedding geraniums.

Respecting spring effect we can never get the plants mentioned in such form as when treated in a more permanent manner than that of annually tearing them up for autumn planting and spring flowering. Again, when raising beds above the grass level, apart from elevating the centres, various saxifrages of the Umbrosa type, or even sedums, are splendidly adapted for walling in the beds a foot or more in height. Even the old London Pride, *S. umbrosa*, forming a sustaining wall to a bed, slightly sloping inwards of course, when flowering in combination with a good blue forget-me-not, gives an effect as charming as it is unique. And what a relief is this combination bedding—the employment of hardy plants as suggested—where the strain of bedding is perennially imposed on the garden resources.

Now, some arrangements will already be in the planter's eye for the summer bedding, and preparations made accordingly. Stocks of everything destined for the purpose will, of course, be under manipulation in the form of cuttings and seedlings, whilst any shortage can be easily made up from our well-stocked Irish nurseries, whilst for gross-feeding things such as cannas, referred to in March, in which foliage plays a prominent part, some good fertilising material in the way of decayed manure, with rough leaf-mould, will be in course of preparation or held in reserve for the purpose; otherwise

we have always found it preferable to do all manuring of the beds in autumn, when both time and manure are less scarce. With spring gardening well carried out we do not want to touch the beds till June, but then we want to touch them in earnest, and if possible have the whole thing over and cleaned up in a week. Prior to that it may, in some instances where arrangements serve and certain beds are able to be cleared, be possible to anticipate the planting and get the calceolarias into position; if so, so much the better for the "calcey," which has a nasty habit under late shifting of turning up its toes. This pertaining to the *Aurea floribunda* type, and apart from *amplexicaulis*, which is a more tender subject in a way.

A good deal of this "calcey" collapse is preventable by taking the plants in hand at once. Presuming the batch of calceolarias to be now in a cold frame they may be hard pinched for the last time, lifted and put out in manure six inches deep on a hard bottom in any sheltered position, when at planting time they may be cut out with the trowel bearing masses of roots for transferring to the beds, and that in good stuff too, needless to say. Spring bedders, notably wallflowers and forget-me-nots, are great robbers, and again may we anticipate by remarking that rich soil is the curse of the bedding geranium, not only in producing foliage at the expense of flowers, but conducive to disease. Of latter years bedding geraniums have collapsed wholesale around London with a stem disease termed by some black leg, probably of fungoid origin, or if not that something else, and we noticed isolated plants affected last year nearer home. Those having noticed this would do well to lime the soil previous to planting.

In the pleasure grounds the first mowing will have taken place, this primary operation being not only too often that of cutting but of cleansing off winter debris where due respect is not paid to the useful lawn mower. The scythe and a good scrubby birch broom are undoubtedly the best implements for a start, but scythe mowing now seems a lost art. Anyone, of course, can push a lawn mower, but few, we fear, bring any intelligence to bear on its working. That, at least, has been our experience, for with a good type of machine which had been in use but one season, our head pleasure ground man (headless in one sense) accosted us on one occasion bearing "her" shoulder high with "she's bet, you'll have ter get me a new un; see how she squeaks."

The chief work in this department is what may now be termed routine work. Hollies, nevertheless, may be transplanted from now till June if required. Some authorities think it the best time for transplanting these rather miffy subjects, but with all respect for their opinion we hold our own, and that is that autumn is the time for all shrubby subjects, and for evergreens early autumn at that. The knotweeds (*polygonums*), especially the giant Sachalinense and climbing Balduchuanicum, are now pushing freely, and pay for a good mulching of heavy stuff, as will the noble-foliaged gunneras and the bamboos, care being taken that with the latter what is employed for fertilising is sufficiently open and free, as not to cripple the young growths pushing later on.

Rhododendrons, also, will pay for a good mulching now or later, when the seed pods are being removed contemporaneously with the start into growth,

Fastidious as is the tribe they will not only not object, whether planted in loam or peat, to some good, heavy, well-decayed manure, but thoroughly enjoy it. Where daffodils, crocuses and other bulbous subjects are naturalised in the grass one scythe-mowing at or after mid-summer is sufficient for all purposes. This in allusion to the pleasure grounds, which must not lose their character for smartness and good keeping, at the same time the bugbear of tidiness and trim ways need not ogle one at every turn; yet here, as elsewhere, a clean walk covers a multitude of sins, and we cannot but think that the gardener who was born in the age of efficient weed-killers has reason to congratulate himself on escaping one, at least, of the worries of life which his forebears were afflicted with. Smart men, however, recognise this and other things too, sparing no pains to have their avenues and walks walkable in all weathers, and it pays, for by their walks ye shall know them.

The Fruit Grounds.

By A. BARKER, Carrigoran, Newmarket-on-Fergus,
Co. Clare.

MARCH, "the month of many weathers," is fast passing away, and fortunately this year there has not been any very striking variations in the weather of March, and such weather as we have experienced has given very favourable opportunities to clear off arrears of routine work of the late season, and getting through such work as was advised for the month; consequently the month of April should find all fruit quarters quite "spick and span" and ready for "the April showers that bring forth May flowers." Well, there seems to be a very pleasing quantity of flowers to "bring forth" in both April and May, so I hope they may blossom out under very propitious weather conditions and give us a bountiful crop of fruit. However, it is very advisable to make the best possible preparations to protect wall trees from the spring frosts which we rarely escape altogether. Lengths of wall trees may be protected from frost in various ways, more or less elaborate and costly, but a ready and economical means of protection may be provided by using the nets employed for protecting strawberries, &c., from birds. Larch, or any other light poles, should be laid slanting against the wall top at intervals of three or four yards between each pole; secure the top of pole to the wall with a tie of wire or strong string, sink the bottom of pole a few inches in the ground, about six feet from base of wall, then run a line or wire from pole to pole, giving the line a twist around the pole at wall top, also a second line parallel with the top one, and about four feet down the pole; then spread three or four thickness of netting and tie at intervals to lines and poles (light canvas is also a suitable protecting material); this covering may remain as fixed until danger from frosts is past. I have seen wire netting used instead of string netting and light spruce branches tied along the netting. Trees coming into flower at end of March or early in April are very deserving of protection, even if only poles are fixed and ready to stretch a couple of garden mats or any available protecting material across on the appearance of a frosty night. This covering will almost certainly result in a crop of fruit on the

trees, whereas if the trees are not protected a single night's frost may completely destroy all prospects of a crop of fruit.

If permanent raspberries are not already shortened to the desired height, get them cut back at once; also cut back any that may have the tops injured by frost down to a living bud. Newly planted raspberry canes should be cut down to six inches from the ground; use a sharp secateur for this cutting, or if a knife is used, place the toe at base of cane to prevent any loosening of the roots by the pull of the knife.

Keep an eye on late plum blossoms where bullfinches abound, as they frequently attack these buds early in April; apple blossoms are also attacked by bullfinches in some seasons, and they quickly destroy great quantities of blossoms if not detected and stopped. As the foliage on gooseberries and currants expands, keep a look out for caterpillars, and on the first appearance of caterpillars spray the whole of the trees with arsenate of lead at the rate of 1 lb. of Swift's arsenate of lead in 50 gallons of water, using a very fine spray, and cover the whole of the foliage with a spray.

Be careful to have all newly planted fruit trees mulched, and especially so in case of late planted trees. On the first appearance of weeds hoe the ground well to keep them down, and where ground under fruit trees that was dug early in the season has become caked and hardened on the surface use the hoe freely to break up the surface; a Bucco cultivator is an excellent tool for this purpose, being quicker and more effective than an ordinary hoe. In orchards and fruit plots, if not already done, make a special effort to get all fences, roads and walks, &c., put into good order; all rubbish or weeds burned or cleared away to give a smart and tidy appearance and prevent the harbour of various enemies which find an agreeable refuge amongst such materials. Where grafting is to be carried out and the preparatory cutting back of trees, the storing away of scions has been duly performed, take the first favourable opportunity for completing this operation. During the early days of April the stocks are generally found to be in proper condition for grafting, so if not already in hand procure grafting wax or clay in such quantities as may be required. If good adhesive clay is at hand this forms an effective and economical medium for closing up the grafts; the preparation of the clay must be the first preliminary when grafting is to commence. First, chop up the clay and beat it out on some hard floor, removing any stones that may be found; thoroughly mix with the clay about a third of horse-droppings that have previously been rubbed through a fine sieve, damping the whole more or less to bring into proper consistency (the clay must be of about same consistency as glazing putty when fit to use). Give the clay plenty of kneading, and it will not split or crack in dry weather. By using grafting wax the work may be got through much more expeditiously, and if the wax is of good quality is easily applied and a certain protection to the grafts while the union is completed.

Crown grafting (see Fig. 1) is a simple and effective method for renovating trees or introducing more desirable varieties of fruit, to replace indifferent kinds, and a most generally adopted method at this season of the year. When a favourable day presents try one or

two stocks by slitting the bark at some point where a scion is not to be inserted; if the bark parts readily and cleanly from the wood this is a sufficient indication that grafting may proceed. With a good, sharp saw cut the stock at a suitable point, make a slightly slanting cut downwards, being careful not to split or tear the bark; prepare the scions by cutting into lengths of about five inches, the upper part of scion to have three or four buds, and the lower part must be cut with a sloping splice cut (as at Fig. 2). Commence opposite or immediately below a bud, a small notch cut across the upper end of the cut serves to keep the scion steady on the stock; now slit the bark on the stock to a depth slightly greater than the cut part of the scion, raise the

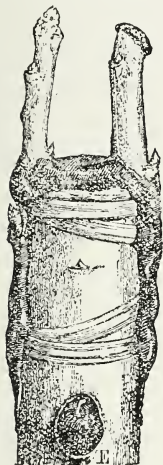


FIG. 1.



FIG. 2.

bark with the handle of a budding knife, or a thin piece of wood cut wedge shape and quite smooth; carefully insert the scion under the bark, being careful to have the cut portion in close contact with the wood of stock (at two or three points at least), then bind up the stock with stout strips of raffia (or very strong worsted may be used instead), sufficiently tight to keep the scion quite firm and steady on the stock; do not bruise the bark of stock with the tying, and only commence tying when two or whatever number of scions are to be worked on the stock have been inserted. After tying on the scions carefully close the slits to exclude air and wet, also wax over the head of the stock, and any fresh cuts on top of scion. If clay is to be used, gradually lay on the clay until a good sized ball of it has been worked around the grafts, including head of stock; thus proceed with the various stocks until the whole are got through with as little delay as possible. In case of trees that have had the various branches or a suitable number headed back, as previously advised, one or two scions worked on each branch is quite sufficient, and if desired two or three different varieties may be worked on the one-headed back tree. As an illustration of this, a few years ago I advised regrafting a very ancient-looking

French crab apple tree, and it was grafted with Allington Pippin, Newton Wonder, and London Pippin. I saw the tree at the end of last summer carrying a splendid crop, each variety being very well represented

The Vegetable Garden.

By WILLIAM TYNDALL.

THIS is one of the most important months of the year to the grower of vegetables, and it is important that every opportunity be taken when the ground is in a fit condition to get seeds sown, as if let slip it often causes disappointment afterwards. During April many kinds of vegetables require to be sown or planted, and any work recommended to be done in March and not yet completed should be got through at once if at all possible. I am afraid that up to the middle of last month slow progress was made in getting in crops on account of bad weather. In sowing seeds I much prefer sowing in lines instead of broadcast, as then the plants can be hoed between and the ground kept clean. The more the surface-soil is worked the better the crop will do. If sown broadcast the crop must be kept free of weeds by hand-picking, and this process is tedious and expensive. Spring cabbage and winter spinach are much benefited by a dressing of nitrate of soda; to the latter mentioned a small teaspoonful to each plant, and soot and wood-ashes mixed to the spinach. Both crops should be frequently hoed to encourage growth and keep down weeds, annual kinds of which if not attended to would ripen their seeds and increase quickly.

Plant out during the month, as weather permits, cauliflower, lettuce, onions, leeks, and sprouts raised under glass, having them carefully hardened off as advised last month, so as to prevent too great a check on growth. Select dull or showery weather when planting. Successional sowings of peas should be made during the month, selecting mid-season varieties, and also a sowing of broad beans. In light soils I prefer to sow in trenches opened one and a half feet wide and deep with a foot of manure at bottom of trench, then covered with four or five inches of soil and walked over to make firm. Sow pea seed thinly, and cover about three inches deep. Sow beans in a double line nine inches apart. When growing give plenty of water and liquid manure in dry weather, ever remembering never to apply liquid manure to plants when the soil is dry. First give a good soaking of clear water the evening before.

Make a couple of sowings of cabbage, cauliflower, broccoli, kale, turnips, Brussels sprouts, savoy, and lettuce during the month for a succession. About the middle of the month sow carrots, and by the end of the month pickling onions.

CARDOONS.—There are two ways of raising plants of this vegetable, sowing direct on well-prepared trenches deeply dug and well manured. The trenches may be two feet wide and deep, and always break up the bottom of trenches by digging or forking, never leaving them hard, as is so often done. Put in about fifteen inches of well-decayed manure, and five inches of soil over it; make firm and sow two or three seed together at every couple of feet along the trench, thinning to one

plant when fit. Most gardeners sow the seed in pots and place in a mild hot-bed till up; harden off carefully, and plant out before the plants get pot-bound. On trenches prepared as above, cardoons require plenty of water in warm, dry weather, and every week or ten days give a good watering with liquid manure, or apply one of the many good fertilisers advertised in this paper and water in.

CARROTS.—A warm and sandy soil is best for this crop, but few growers have this natural advantage, so that in many gardens the carrot crop is little better than a failure, canker, maggot and wire-worm being the great enemies. Deep digging or trenching does much to prevent attacks, especially if the ground has been dressed in the autumn with gas-lime, or this spring with apéritite or vapourite. Freshly-slacked lime and soot can also be used with much advantage when preparing the ground, and at the time of sowing strong clay soils are much benefited by a good dressing of burnt garden refuse and wood ashes. Make a couple of sowings by the middle and end of month.

SEAKALE.—The earlier in the month the planting of seakale is done the better, so that the roots will have as long a season of growth as possible to get strong. The roots, being prepared as advised in a former issue, should be planted in lines 1½ feet apart and 9 inches from plant to plant, in a good open position in

ground deeply trenched and well manured. If plants are to be raised from seed sow early in the month in ground prepared as recommended for cuttings, in lines 1½ feet apart, and cover the seed 2 inches deep; thin the plants when fit to 1 foot apart.

PARSLEY.—In many gardens parsley is difficult to raise, it dying away through the ravages of grub. Soot and burnt refuse are good applied to the soil, which should be well prepared, and before sowing the seed make the ground firm by walking, as parsley likes a firm root run. Where the convenience is at hand plants may be raised under glass in the spring same as onions, &c., and planted out this month, giving the plants nearly a foot of room every way.

BEANS.—About the end of the month a small sowing of French beans can be made on a well-sheltered border facing south in lines 2 to 3 feet apart, planting in a double line 6 inches apart in good rich soil manured early in the year.

POTATOES.—Finish planting potatoes as early in the month as possible. For early varieties make the soil as light and warm as possible, and in earthing-up do not draw more soil to the haulm than is required to keep steady, and some sorts, as Early Puritan, from being greened, as much soil put up in earthing keeps the crop late and excludes sun, light and air, and this often causes inferior quality.

A Calendar for Amateurs.

FRUIT.—The conservation of soil moisture is vital in the case of fruit (and other) trees. Mulching with litters manure, therefore, should not be neglected this month. The same principle applies to strawberries. A firm soil (personally we think it can hardly be made too firm) is essential to this crop. If you fear a coming attack of sawfly caterpillars on gooseberries, lightly dig into the soil a mixture of soot and lime, and spray the bushes with a weak emulsion of liver of sulphur (potassium sulphide) and soap (proportions sulphide, three or four ounces; water, three gallons; soft soap, five or six ounces). This spray is also good for mildews. If apple-sucker, red spider, or aphid threatens, spray with an emulsion of nicotine (one pound tobacco to two and a half gallons of water, using the relatively inexpensive "denatured" tobacco sold as "hot powder.")

THE FLOWER GARDEN.—Sow annuals. Chinese asters may be sown under protection of a frame at beginning of month, and in the open border by end of month. The following should be sown during April (they are all of easy culture and suitable even for town gardens):—Marigold (both French and African sorts), everlasting (Acroclinium or Helichrysum), the flowers of which may be cut and used for the decoration of rooms in winter; candytuft, clarkia, coreopsis (good for cutting), godetia (very showy), sunflower, larkspur, red flax, lupin, mignonette (sow thinly), nasturtium (Tom Thumb variety or Ruby King for covering trellis)—they flower best on poor soil; Love-in-a-mist, nigella (select the Miss Jekyll variety), phacelia, blue, very showy; *Phlox Drummondii* (invaluable), Shirley poppies, salpiglossis, Virginian stocks (good while they last);

plant out sweet peas and any perennials raised under glass. Repot chrysanthemums into larger pots. For pot plants such as chrysanthemums, cinerarias, pelargoniums, fuchsias, roses, &c., the following food mixture may be added to the soil with advantage:—Basic slag, bone meal, and sulphate of potash, equal parts, using 8 oz. of the mixture for each bushel of soil. When the flower buds appear water with a solution of quarter of an ounce of nitrate of soda in each two gallons of water. Make and insert cuttings of abutilon, petunias, heliotrope, and fuchsias. Shift autumn-struck zonal pelargoniums into larger pots. Repot begonias. Top-dress with fresh soil hanging baskets. Prepare ground for dahlias by digging and manuring. Plant corns of hybrid gladiolus in a warm, sunny aspect. Divide and rearrange plants in herbaceous border (if not already done). Sow seeds of wallflowers. Look over rock garden, remove weeds, and mulch any plants requiring such treatment. Mulch roses, this will encourage development of flowers. Keep the hoe going, it will save trouble with weeds and aerate the soil.

THE VEGETABLE GARDEN.—All potato planting should be finished this month. Sow peas every ten days or so for succession. Prick out seedling cauliflowers and Brussels sprouts. Sow beet, broccoli, carrot, lettuce, mustard and cress, radishes (once a fortnight), spinach and turnips. Plant out frame-raised French beans if weather is fine. Sow ridge cucumbers and vegetable marrow under glass or in gentle heat for planting out later. Prepare trenches for celery. Try the effect of an application of lime to the soil (14 lbs. of slaked lime to each square pole).

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IRISH GARDENING

VOLUME V.
No. 51

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

MAY
1910

"The White Flowers of the Narcissus"

By PÁDRAIC COLUM.



IF you have two loaves, sell one and buy the white flowers of the narcissus." The saying is Mahomet's. It reminds us that beauty is a primal need, coming after bread. Moreover, the saying ex-

presses an obligation that is not often in our consciousness. Morality, rightly understood, is not repression, but an attempt on our part to restore harmony to the world. A great moralist, wishing to contrast the intentions of nature with the perversions of men, begins with the beauty of flowering things. The book I have in mind is Tolstoy's "Resurrection." Spring has come to the place that men have tried to disfigure. In the town the grass revives and springs up between the stones; the birches, the poplars, and the cherry trees unfold their buds. "It was not this spring morning men thought sacred and worthy of consideration, nor the beauty of God's world, given as a joy to all creatures, this beauty which inclines the heart to peace, harmony, and love." To permit the free expression of beauty, to grant to others a share in that beauty, is part of morality. We owe to ourselves the white flowers of the narcissus. To sell a loaf and buy them may be an obligation. To consider the lilies of the field may be as binding as the obligation to consider the poor.

The fact that there are few flowers is a real reproach to our countryside. Harsh and un-

lovely our farmhouses stand, the barest expression of mere living. The lack of flowers about our houses was in a measure due to harsh conditions that have passed. We look for more flowers around the houses of the new order. Our people have got the second loaf, and now they should remember the obligation of the text—to exchange it for the flowers of the white narcissus.

To-day in the town we have the flowers of spring. Daffodils carried about the streets flash a message through the city. The bank of flowers at Nelson's Pillar gives colour and freshness that the city sadly needs. When will we realise that it is worth our while to have boxes of growing flowers around the base of that central column, and to set climbing plants inside the ugly iron bars? In the country the sloe-bloom has come on the hedge, and in the gardens we pass we see daffodils and flowering pear trees. These labourers' cottages are the houses of the new order. In the garden of one cottage there are pansies and wild flowers growing; another cottage has a creeper across the porch. But then we come to rows of new cottages bare of flowers and creeper. The powers that conferred the cottage and the half-acre can do something to set flowers there. I learn from IRISH GARDENING that our County Councils have power to deal particularly with cottage and allotment gardening. It is in the power of the Dublin County Council to appoint a horticultural instructor who would visit these allotments and put the labourers in the way of making good use of their half-acre. The expense of this appointment should not be con-

sidered. The County Council owes to the labourers every possibility of advancement, and the letter from the Horticultural Organiser of the Essex County Council makes it clear that profit can be made from the proper cultivation of these garden plots. Besides the material advantages, IRISH GARDENING draws attention to an issue that our councillors might consider. The effort to keep a well-stocked garden, the interest, the appreciation of the result have a mental and moral value that should not be overlooked. The gardens in flower are a joy to the passer-by, and, besides, they add greatly to the credit of the country. In England the profusion of flowers before cottages such as these is the fairest sign of a settled and prosperous life. We are not without the means of procuring the flowers. Let us follow the counsel of the Eastern sage, and, having two loaves, let us barter one for the flowers of the white narcissus.

Current Topics.

By C. F. BALL, Royal Botanic Gardens, Glasnevin.

THE Royal Horticultural Society appear to have made a good move by holding their spring flower show in conjunction with the spring show of the Royal Dublin Society.

The attendance was remarkably good, and must have been an encouraging sight for the council; in most respects this show was a distinct advance upon former ones held by the society.

The centre of the large hall was well filled with a goodly array of daffodils, the names of new competitors showing the ever-increasing popularity of this spring flower. Among the new white trumpet daffodils, Messrs. Hogg & Robertson's new seedling, Mrs. F. W. Moore, was to be seen; it is a bold and handsome flower. Mrs. Betteridge was also shown by one or two competitors; this is still one of the most beautiful and purest of all the white ajax, the perianth is crimped at the edges, and the large open trumpet has a fluted brim.

Mrs. R. Sydenham, an expensive bulb, is a model for show purposes, the perianth is of the purest white and very well shaped, the trumpet being very long and narrow, changing from a pale yellow to a pure white; to my idea it has a rather stiff appearance.

Among the reasonable priced white ajax, Madame de Graaf still holds the foremost place; as then we have a smaller but equally pretty varieties as N. moschatus, Wm. Goldring, Snowflake, Mrs. Camm, Mrs. Thompson, cernuus, and albicans.

Foremost among the yellow ajax was King Alfred; with the glorious yellow of the flowers and its strong habit it has made a great name, but unfortunately some people already speak of it as a bad doer.

A daffodil which gives good promise as a garden plant and for naturalising is Golden Bell; the large

trumpet is finely filled, though for show purposes the perianth is rather weak. It is a strong grower, free flowering, and increases very quickly.

Lady Margaret Boscawen, seen in the centre of the photo, is a flower like a giant bicolor Sir Watkin, the growth is free, and the flowers stand well, so that when the price becomes cheaper it will probably be a favourite. For most collections it is not necessary to get Brigadier if one has Lady Margaret Boscawen, as they are very much alike.

The five flowers at the top of the photo are Seagull. This variety and Albatross are two seedlings raised from the same seed pod. Both are free growers from one and a half to two feet high, bearing large flowers of the Barri type, having pure white perianths; the yellow cups differ in shade, and the edging of orange.

The delicate beauty of the Leedsii appeals to most people. In the photo at the base are Waterwitch and Mountain Maid. Others which were well shown were Adriane, Duchess of Westminster, Gem, Mrs. Langtry, and White Lady.

The red cups of the Incomparabilis section are an attraction; many were to be seen in good form, as Vesuvius, Lucifer, Lady Arnett, Blackwell, Oriflamme, and Firebrand. Some of these cups burn badly if planted in full sun. The cups get bleached after a few days' sun, then the beauty of the flower is gone, so the best plan is to plant them in half shade. C. J. Backhouse prefers such a position. Remarkably fine flowers of Firebrand were shown by C. M. Doyne, Esq., which were highly commended by the judges.

Improvements in the poets' narcissus are very marked and beautiful; some are getting fairly moderate in price, as Cassandra, Horace, Homer. For an early poeticus, one that can be recommended is Dante, a strong and free grower. All these poets' narcissi will give finer flowers after they have been planted a year.

The Japanese garden in the corridor furnished a feast of colour; this and a collection of Alpines made a striking exhibit, furnished by the Tully Nursery, Kildare. The Alpines were a choice selection, including several new Chinese primulas, as P. Forestii, with yellow flowers, found on limestone cliffs; P. lichianensis, with reddish, purple flowers, related to P. cortusoides, and P. muscarioides, with capitate heads of bluish, purple flowers; apparently this will require a moist, peaty soil, as it grows in company with P. sikkimensis on the banks of mountain streams in S. E. Tibet. Other primulas finely shown in groups were P. algida from Siberia, P. bellunensis, P. frondosa, P. pubescens alba, usually known as P. nivalis, and P. spectabilis. Well-flowered plants of the Pine-barren Beauty, Pyxidantha barbulata were well shown, and the Chinese Carex Scaposa, with white flowers, was another rare and interesting plant. Large groups of Trillium grandiflorum were very attractive. Some good aubrietias gave colour to the edging, as A. cilicica and A. Bridesmaid. Androsaces were well represented by A. villosa, Chumbyi, and sarmentosa. A large group of the Pasque flower and a few plants of the white variety of Anemone pulsatilla alba were quite a feature. Messrs. Pennicks & Heath also had stands of hardy plants; among the latter exhibit was a nice plant of Cardlyne indivisa vera. Primula malacoides was pretty, and needs the

same treatment as *P. Forbesii*. A distinct Grape hyacinth was shown called *Muscaria paradoxum virescens*, like a large form of the type. Among the mossy saxifrages the crimson *Gloria* was in flower. Throughout the exhibit fritillarias were used as dot plants.

The Soy Bean

The soy bean as a source of oil for soap-making and as a food for farm stock is making great advances in Europe. The plant has been for long cultivated in China and Japan, but since the Russo-Japanese war, when its seeds were extensively used for feeding horses while troops occupied Manchuria, its utility as a food of extreme richness, both in oil and albumen, has been more widely known and utilised. Although of so recent introduction, it is said that Japan exported to Europe during the past year about 800,000 tons of the bean, and that the trade is rapidly increasing. Soy bean is a leguminous plant, and requires for its successful culture the presence of the right species of nodule bacterium, which of course is not found naturally in our soils. The writer of this note remembers seeing about ten years ago in the experimental gardens attached to the Guelph Agricultural College, Ontario, plots of soy bean grown in untreated soil and in soil inoculated with a scattering of soil imported from Japan. As the Japanese soil contained the right sort of germ to produce

large, healthy nodules on the roots of the plants, the comparative results were very striking and instructive. While the untreated plots produced only puny, starved plants, the plants on the other plots were tall and

vigorous, and the whole crop apparently normal. The plant is now extensively used for purposes of green manuring in Canada and the States. As to the value of soy bean as a crop, we may note that the London price per ton for these seeds is from £5 to £6, while the oil extracted from the beans fetches about £22 per ton, and the feeding cake made from the "refuse" after extraction from £6 to £7 per ton.



VIOLETS.—

Lovers of these charming flowers desirous of having blooms during the winter months ought to prepare beds for planting forthwith. The best situation is one under the shadow of a north wall, where they will be protected from direct sunlight. The beds should be well dug and liberally supplied with well-rotted manure. Before



A GROUP OF BEAUTIFUL NARCISSI PHOTOGRAPHED AT THE SPRING SHOW
(For descriptions see "Current Topics.")

planting the soil should be made firm and the surface fine-grained by means of a rake. Divided crowns of old plants are used as the new sets, and after planting, syringing morning and evening for a few days will help the plants to settle down comfortably in their new quarters. Princess of Wales and La France are two popular single varieties, and Marie Louise an extensively used "double."

The Chrysanthemum.

V.—Treatment in Pots.

THE cuttings rooted at the end of last year and the beginning of this year should be ready this month for their final potting into eight to ten inch pots. These plants are now in six inch pots, and should have been stopped some time last month. From the beginning of this month the plants should be exposed night and day, protection only been given if frost makes appearance. Preparation should be started at once for their final potting. About the middle of this month the strongest and best rooted plants may be shifted. The size of the pots will vary according to the variety—some chrysanthemums making stronger root growths than others. See that the pots are clean—if new steep in water for 24 hours and dry in the sun before use. Water the plant about two hours before shifting, and when the repotting is done keep close for a few days. Do not water the soil after potting. Sprinkle the foliage only for the first few days. If water is then required apply it very carefully so as not to puddle the new soil. As soon as the roots commence action stand the plant out in the open upon boards or ashes, and water freely. By placing the pots upon boards or ashes drainage is assisted and worms are prevented from entering. The rows of pots should run north and south. The tallest plants should be placed to the north so that the sun can shine on all. Wire stretched between two posts, one placed at either end of the rows, forms a support to which the stake of each plant can be tied, leaving fifteen inches from plant to plant. Be careful to keep the growing point tied close to support, because at this period it is very brittle.

COMPOST FOR FINAL POTTING.—This should be rougher than before over the usual drainage. Drain with crocks, put a layer of coarse mortar rubbish, broken oyster shells, or cinders. Upon this place some rough lumps of broken up turf soil, and press firmly. Upon this place some of the prepared soil. Put roots of plant in position, and fill up the pot to within about an inch of the rim; plant firmly. The soil used by some of the best growers is made up as follows, and beginners will do well to keep as near to the formula as possible until experience teaches.—Chopped up turf soil, 3 parts; spent manure, 1 part; wood ash, $\frac{1}{2}$ part; river sand, $\frac{1}{2}$ part; bone meal and soot, a good sprinkling throughout. Mix the whole very thoroughly.

BREAKS.—When a young plant has grown six inches it is advisable to pinch out the growing point so as to hurry on the development of the side growths. The plant, if left to itself, would naturally break—that is, a flower bud would form at its growing point, and below it three or more side shoots would develop—the bud now being pinched out and the side shoots allowed to grow (should the bud be wanted to flower then the side shoots would be pinched out so that the whole vigour of the plant could be used in the development of one flower). It is not really necessary to stop plants at all unless there is a device for getting flowers at certain

dates, or for getting large show flowers or to secure any particular form of plant for decorative purposes. Nearly all chrysanthemums make two or more breaks during their growth. The first bud forms in May or June is called the first break. Some early varieties show a second or intermediate bud in July; this is the first crown bud. In August the second crown bud is formed; this is the one that is usually retained for flowering. If these latter buds are pinched the plant makes its last effort and produces its terminal buds.

EARLY FLOWERING CHRYSANTHEMUMS.—Plants may be purchased direct from the growers and planted straight out into the borders any time this month. Pompoms are very effective as border plants; their compact dwarf habit make them suitable for planting in the borders to the front of the decorative kind. They are the earliest of the early flowering chrysanthemums. Good decorative plants for the border are Horace Martin, a rich yellow; all the Masse group are specially useful, being strong growers displaying a variety of colours; Well's scarlet makes a fine border plant; Champ d'Or Holmes, white, and Perle Rose. The soil for these should be well dug and rather liberally manured with well-rotted farmyard manure. They require a sunny situation, and care must be taken not to have them too crowded, and they love a buoyant air.

E. A.

Roses.

By O'DONEL BROWNE, M.D.

IT was a pleasure to see our favourite flowers so well shown at this time of the year at the recent show at Ballsbridge. They seemed to come to cheer up our flagging spirits in this most distressing season. Will our out-door roses never get a move on? It seems to me that they are wise, as no sooner does a fine day come than it is immediately followed by a cold night and a wet day. I cannot remember a year when roses moved so slowly. Therefore, it was, as I have said, a pleasure to see those clean, perfect blooms at the show; and what beauties they were! Let me tell you of some of them.

Competition was very strong in the big class—viz., twenty-four blooms. I thought when I came to judge them that I was in for a hard job, as I had seen some of the exhibitors' faces wearing anxious looks. Certainly there was not much trouble in finding the first prize; and here let me give Mr. E. D'Oiler and his gardener sufficient praise for his exhibit. Level, even, fresh, and what beautifully formed specimens his roses were! His strongest blooms were six Mrs. Edward Mawley's, five of them good, one a trifle passée. For size, I never saw such fine specimens. I asked the worthy secretary to get our editor to have one of these flowers photographed, as well as the whole stand, so that my readers might see what I am trying to describe. Have they done so, I wonder? Then, again, in his box were two fine blooms of our good yellow Tea Souv de P. Notting. Ranking beside the Mawley was a big bloom of White Maman Cochet. Funny! When I think that once Mr. D'Oiler told me that Cochet was *no* use under glass. Comtesse

de Nadaillac was not so well shown as last year (the memory of that bloom haunts me), but this bloom was a good one. He only had two poor flowers, one passable, but let us draw a veil over his Alice Lindsell! Mr. Bewley, who was second, had a level even lot, mostly H.P.s and H.T.s, where as Mr. D'Olier had Teas as his mainstay. I should have liked to see Mr. Bewley's flowers with a little more staging done to them. He had, if my memory serves me rightly, a wonderful bloom of "H. A. Moore," to which he could have done more justice. It was the best bloom he had. His flowers lacked the depth of petal of Mr. D'Olier's flowers. Mr. Crozier was third with small flowers, which were well coloured.

In the twelve roses, Mr. D'Olier came again to the fore, and I chuckled to see how confidently he had measured his strength in this and the big class. He took good care to get a telling Mrs. Mawley into the twelve, and left a poorish specimen in the twenty-four. This, I may point out to a novice, is a dangerous game to play at, I mean dividing forces, but Mr. D'Olier measured his opponents' forces perfectly. The tit-bit in this box was a Madame de Watteville, a hard rose to grow well, evidently off the same plant as the bloom of last year, though not so highly coloured as last year's flower was. Mr. Crozier came second, and Mr. Bewley third. The one great absentee was our old friend of spring shows—Maréchal Niel. If I remember rightly, there was not a single flower shown in any box.

There is no rose that can put such a finish into a box as the Maréchal. Even Mr. D'Olier, who usually does Niel well, had none. But we cannot always have what we want, even in rose growing.



CHRYSANTHEMUM ("JASON")

A good out-of-door variety, 2½ feet high, carrying handsome flowers of a soft, pure colour, rather in flower during the month of October. (From a photograph of a plant growing in Messrs. Watson's Nurseries at Clontarf.)

Spring Show at Ballsbridge

THE COUNCIL'S DILEMMA

BY common consent, the spring show of the Royal Horticultural Society of Ireland was far and away the best within recent years. The scene on entrance was one of arresting beauty, and the moving crowds of visitors added a life and interest unhappily rare at such functions in Dublin. We sincerely congratulate the council and its strenuous secretary on the attainment of such success, and hope that the high standard will be sustained in future shows. There were some notable and original exhibits, especially those of the Tully Nursery, which we have fully described and illustrated in the present issue. The management of IRISH GARDENING, anxious to contribute something towards the interest of the show, got together an educational exhibit, illustrating a typical collection of stove plants selected from the establishment of Mr. Ernest Bewley, Chairman of Directors. This exhibit attracted considerable attention, and in response to the request of several visitors we append a list of the more outstanding plants:—*Dendrobium thyrsiflorum*, *Dendrobium dalhousianum*, *Dendrobium devonianum*, *Cattleya Shroederæ*, *Odontoglossum Pescatorei*, *Anthurium Scherzerianum*, *Amaryllis*, Fire King and others *Gloxinias*, *Calceolarias*, *Cocos Weddelliana*, *Kentia Belmoreana*, *Cytisus racemosus*, Double tulips, *Rose Blanche*; Single tulips, Prince of Austria and Thomas Moore; *Carex Gallica Variegata*, *Nephrolepis todeoides*, *Rex Begonia* in variety. The harmonious colour scheme in this group was perfect, the credit being due to the artistic feeling of Mr. Cave (gardener to Mr. Bewley), who was responsible for the actual staging of the exhibits.

The exhibit was set up of course with no idea of gaining recognition from the society, but the judges recommended that a silver medal of the society be awarded for its conspicuous beauty. Then a strange thing happened. There was apparently no precedent within the proceeding of this century-old society of recognising for an award a purely educational exhibit. The council was apparently confronted with (to them) a very serious dilemma. It could give awards to exhibitors who grew plants themselves, or to exhibitors who employed gardeners to grow plants for them, or to nurserymen or others who did not grow plants at all but traded in them, but it was surely entirely outside their functions as a Society to make an award to a Gardening Journal that used plants merely for educational purposes, and so the recommendation of the judges was quashed. The council was in fact in the same kind of mental muddle as was *Punch's* famous railway porter when confronted by an old lady travelling with a menagerie of pets. "Stationmaster says, mum, as cats is 'dogs,' and rabbits is 'dogs,' and so's parrots, but this 'ere tortis is a hinsec', so there ain't no charge for it."

GENERAL REPORT

WHAT proved to be one of the most successful spring shows ever held by the Royal Horticultural Society of Ireland took place on April 20th and 21st in conjunction with the spring show of the Royal Dublin Society. The amalgamation of the two shows was in the nature of an experiment, but there can be no doubt as to its success, and the two societies may congratulate themselves on the event. The exhibits were arranged in the finely-lighted Arts and Industries Hall and in the annex. The entries were well up to the average in number, while the quality all round was rather above the average. The arrangements and grouping of the classes had been well planned, and there was a noticeable improvement in the arrangement of the staging by which gaps between the exhibits, frequently seen at former shows, were practically avoided. The tables of foliage and flowering plants arranged for artistic effect made an attractive display, but the class lost much in effectiveness through being relegated to a corner where the groups could only be properly looked at from one point. The great centre of attraction in the show was the miniature Japanese garden arranged by the Kilcullen Nurseries of Tully, Kildare, new comers who received a cordial welcome to the show. The garden, arranged very effectively with bridges, water, rock-work, and the characteristic pigmy trees, was brilliantly gay with primulas, pillar roses, and Alpine plants nicely placed in dark, brown peat, which afforded a very pleasing contrast to the healthy green of the foliage. A bed of red and white stocks, edged with a neat grass border, formed a brilliant mass at the entrance to the garden, and from this tiny gravelled paths lead through vistas to a bold bank and magnificent pillar roses, which formed the culminating point of the garden. We sympathised with the exhibitors because of the background, as the particular shade of terra-cotta used as a wash on the walls of the annex forming the background to this altogether charming display is not one which is suited to natural effects. The exhibit deservedly obtained a gold medal, and from appearances we judge that a satisfactory number of orders were booked.

An excellent collection of stove plants was staged by IRISH GARDENING, which gave to many visitors a new view of what is being done in Ireland with this class of plant. In fact, this exhibit and one or two other trade exhibits were fully up to the standard of the very best exhibits at the leading English shows. Seldom before has such a representative collection of stove plants, including some remarkably well grown orchids, been staged at shows of the society, and we hope that on other occasions IRISH GARDENING will give us displays, representative of other branches of gardening, as it is in Ireland to-day.

The plants have been excellently staged and placed in a prominent position; the stand was one of the most remarkable features of the exhibition. The judges—by no means over-doing it—recommended a silver medal, which the council of the Royal Horticultural Society, in their discretion, refused to confirm. It would appear

much for Irish Horticulture, and when an opportunity occurs to honour one of its efforts, the body presumably at the head of Irish Horticultural movements takes up a quite illogical position, and acts in this unprecedented fashion. It is conjectured that had IRISH GARDENING, Ltd., provided paper and string, and had the plants



SPRING SHOW AT BALLSBRIDGE. IRISH GARDENING EDUCATIONAL EXHIBIT OF GROUP OF STOVE PLANTS.

(Silver Medal Award recommended by Judges but not confirmed by Council of Society).

that the council have no desire to encourage such new comers, and IRISH GARDENING has the honour without the silver medal. The exhibit admittedly deserved a medal, but because, forsooth, the exhibitor neither staged the exhibit for pleasure or profit, but as an educational display, the medal is not awarded. That is, such awards are made, not for excellence of the exhibit, but because of the exhibitor. IRISH GARDENING during the four years of its existence has done

priced for sale, the medal would necessarily have been awarded.

Among the general classes roses were well shown, the cup for nine roses in pots going to Mr. David Drimmie for a good lot of plants on which the foliage was particularly good. The tables of pot plants formed a very attractive section. The first prize exhibit (Mrs. Redmond, Dundrum) was very tastefully arrayed; the second prize contained less of note, and seemed

rather overshadowed by the rose, not a particularly good plant, which occupied the centre; the third prize (Mr. T. F. Crozier, Stillorgan) was awarded to a nice table containing some good cyclamen and schizanthus, though the plants were if anything a little crowded. Some fine anthuriums were the feature of the fourth exhibit. There were only two entries for the amaryllis (six pots) class, the first prize groups containing six excellent specimens, very even in quality, each plant having four flowers on the stalk. Pelargoniums were again well shown.

Competition was limited in the class for gloxinias, but the first prize groups well deserved the award. Tree carnations should secure a larger entry, as they are a popular and useful plant. A good display of deutzias secured first prize for Mr. F. V. Westby, and the class was generally well filled with excellent specimens. Cinerarias, and particularly the Stellata groups, were well shown through the show, those staged by Mr. S. H. Cochrane being especially noticeable, though on some of these advertising labels were unnecessarily obtrusive.

Narcissi were, of course, a feature of the show; if anything the quality of the blooms was above the average. Mr. C. M. Doyne secured the challenge cup for collection of fifty varieties. The flowers were of fine quality, and thoroughly representative of the various sections. The use of the three tier-staging gave the exhibitors a better opportunity for displaying their blooms to advantage.

In the class for roses (twenty-four blooms) there was keen competition. The first prize collection was a really splendid display of blooms, among which Bridesmaid and Mrs. Edward Mawley were particularly good.

The St. Bridgid anemones were very fine, the flowers shown were large, full, and distinct in colour, both in the first and second prize collections. A special exhibit of these popular plants from Miss White, of Gowran, Kilkenny, was awarded a silver medal.

Some good specimens of apples were shown, but vegetables were moderate and somewhat even, with the exception of broccoli and cucumbers, which were good. Four silver and three gold medals and one cultural certificate were awarded, and two trade exhibits were highly commended.

An exceptionally good trade exhibit of spraying appliances was shown at Mr. D. M. Watson's (Horticultural Chemist) stand which apparently excited much interest. Mr. Watson was kept very busy giving technical instruction in the use of spraying fluids to many enquirers.

Japan in Ireland.

PLEASEING as the Tully Japanese Garden was to visitors of the Spring Show at Ballsbridge, it would also be a joy to many to have the large and varied collection of plants used in making that garden of eastern beauty. But next to having them is talking of them, so we propose to make a few cultural notes on the most worthy of subjects. Primulas played an important part in the Alpine flora, and several im-

portant new species were shown. *P. muscarioides*—which is very happily named, for its colour and form are indeed like the grape hyacinth—the plants shown have been grown in the shade of a golden *Retinispora*, and when flowering the heads of the flowers made a nice display, which shows the use of that plant when it becomes plentiful. This plant loves leaf soil and decayed wood. *P. Forrestii*—this plant comes into commerce with a hardy name, and it is said to live as long as 100 years in its native home. It is not so wonderfully beautiful, yet it makes up for that by the leaves giving the fragrance of ripe fruit, which is stronger when aided by its flower. This new plant likes Ireland, for the black bog soil with sand mixed through it seems its only need with us. *P. Liechiangensis* is in the way of *P. Cortusoides*, but is larger and earlier to flower, and seen side by side as at Dublin leaves little doubt that the former has come to stay. We have this plant growing in our wild garden, and it is getting no special treatment, and is doing well. *P. + Mrs. Hall Walker*, shown for the first time, is of the *margurata* tribe, but has a sweet fragrance which is always pleasing, and the colour is a soft lavender with a large flower and strong habit; likes dry treatment. *P. spectabilis*—the form seen at Japan in Ireland was generally stated to be finer than the type, but that is only due to culture. This *primula* succeeds best when top dressed very heavy with cow manure; if it gets starved it does not flower, and even if it does the flowers are small. *P. Mrs. Wilson*—in this plant we have two forms, one being much larger and better in colour than the other, but cultural points may account for this. But our best form was grown on the rocks in our Japanese Garden at Tully, while the smaller was in pots. This seems good to know, and it is one of the best of *primulas* for Alpine rock gardens. *P. algida Siberica* was shown, which is not common and is in the way of *P. farinosa*, but not so strong. The latter was seen in rare form, it having been grown by the water side in peat. This plant is generally treated too dry, and it will pay to make a bog garden plant of it from our experience. *Primula Cashmiriana ruby* a fine dark form with a golden eye was shown, but in this *primula* so many forms are seen that to name one form as better than another is rather out of the question; to say the most it is pleasing to have good shades in this useful *primula*. *P. capitata* was also seen with its silver-like leaves and violet-coloured flowers. This plant likes water so long as it is not stagnant; it is seen best when used in masses. The well known *P. Japonica* was also seen in good form, but one of the most beautiful was *P. nivalis*, which is in fact a white form of *P. viscosa*. This plant is not often seen as good as at Ballsbridge, it had been treated dry all the winter, and the crowns had got quite hard and ripe. When the flower showed it was given a plentiful supply of water, and the result was seen by many stems carrying twenty flowers. *P. denticulata alba* was also seen in good style. Other good plants worthy of note were *Sanquinaria canadensis*, the Blood root. This plant does well in Ireland, and with its anemone star-like flowers gives a pleasing change to other spring beauties. *Saxifragas* were seen in good form, and our old friend *Rhei* is still one of the best, also *Lindesiana*, which is always valued because of its



SPRING SHOW AT BALLSBRIDGE. "JAPAN IN IRELAND,"

Being portion of the popular Exhibit of the Tully Nurseries, Kildare.

compact habit. Several new mossy saxifragas were seen, *Bathoniensis* being one of the largest of this section. The colour is as good as Guildford's seedling, and about twice the size. *Androsace primuloides*, *sempervivoides villosa* were flowered well. These plants require careful treatment in Ireland, and during winter must be kept from excessive damp and wet frosts.

So many other choice Alpines were shown that a full report cannot be given now, as space and time will not permit, but go down to Tully, Kildare, and see Japan in Ireland in all its beauty. There you can go into the garden and see its charms, for in real fact one steps out of old Ireland and enters new Japan. From the entrance gate all the bright foliage meets the eye. This denotes the birth of man. From the birth we lead along the winding path to the school, then the play-ground. We pass on and leave all the charms of infancy behind us and enter into serious life. Then comes the dark and uncertain days of youth, which is represented by dark caves and swampy lands, and at last the rise on to the dry, firm land. This we must call the business life of man; there are hills for him to climb, and broken bridges he may fall through, and there is the mountain of his ambition which successful men climb, and then come the retiring days when he passes over the bridge into home life, enjoys its comforts, and has a garden of rest, yet, still further, we see those winding footsteps which lead to the final rest. There we see a place of sombre effect, which for now we will call the cemetery.

These are all at Tully, and always open to the public eye. There you can come and see these plants in glorious beauty during the month of June.

TULLYENSIS.

Selecting and Saving Seed.

TO an outsider it has always seemed strange that so little seed is saved by the gardener, and especially by the amateur. He has his own particular favourites, and frequently he sees new and strange varieties growing up among them, yet he must always make his annual visit to the seedsman. Why not save himself this trouble?—he would give himself more, of course—and take a step that would bring him far more interest and pleasure in the plants he grows. Why not save seed from his crop, especially if it contains something new? If everybody did this, or if many did it, seedsmen would grumble; but many will not do it, at any rate not enough to affect the seedsman. Besides, how many new plants may be lost every year while we rely upon the seedsman alone! He is always on the hunt for novelties; but how many are there he never hears of! If a new variety comes into his possession he husbands and saves the seed; but how many

new varieties are never given a chance of being reproduced!

Is it a difficult thing to do? Not at all. At any rate, farmers can do it, and why not gardeners? Let us quote one or two examples. Growers of seed grain make a great to-do these days about what some of them call "pure cultures"—samples grown from a single head—and flatter themselves they have discovered a new method. It is as old as the hills. Well, perhaps, not quite, but it is certainly old. Some of our best varieties are descended from single heads that were isolated fifty and a hundred years ago.

So far as the evidence goes, a farmer in Cumberland saw what seemed an unusually good head of oats growing in a potato field about a hundred and twenty years ago. Usually it would have been treated as a weed and cut down, but this farmer protected and saved it. He sowed the seed and saved the produce, and by continuing to do so for several years he was able to give or sell some to his neighbours. In time his neighbours sold to others, and now this oat—the potato oat—is the most widely grown in Britain. Not only so, but other varieties are its descendants although they are known by other names.

There is a farmer who used to grow unusually good turnips, and would do so still if he were not too old. He seldom got seed from a seedsman. He was a native of a part of the country where, at one time, nearly every farmer grew his own turnip seed; and although he migrated to a distant part, he carried this custom with him. His method was striking, but instructive. When his business led him to one of his turnip fields, he did not survey it from the other side of the hedge or from the ends of the drills. He walked right through it. But before doing so, he cut a few twigs from the hedge and clipped them under his arm. Then as he wandered through the turnips he stuck in a twig here and there. The twigs were to mark the good turnips—those that were to be left alone when the rest were pulled—and then transplanted in a corner of his garden or in the corner of some field where they could easily be protected by netting from hares in winter and sparrows in summer.

And if an ordinary farmer can do this kind of thing with a plebeian turnip, why can the amateur gardener not do it with his rare and far more carefully tended aristocrats?

Notes

Walls for Rock Plants.

IN my notes on this subject in last number I ought to have added that, even without preparation, any wall not quite new, not too well built, may be utilised for the growth of rock plants with very pleasing

the walls, and have formed a number of colonies:—*Erinus alpinus*, *Dianthus cæsius*, *Tunica Saxifraga*, *Sedum album*, *S. anopetalum*, *S. dasyphyllum*, *S. glaucum*, *S. rupestre*, *S. sexangulare*. Other plants have formed large tufts equally or more healthy than those in the garden—such as *Sempervivum californicum*, *S. tectorum*, and others; *Alsine Rosani*, *Sedum Maximowiczii*; a few others, such as *Aubrietia deltoidea*, *Draba*,



A VERY PRETTY WALL PLANT.

The above illustration is a photograph of *Erigeron mucronatus* growing in a wall at Lissadell, Co. Sligo. As may be observed, this variety is well suited for such situations, and as it is very free-flowering it presents a charming picture when in full bloom. The flowers are pink in colour, small and daisy-like. The genus *Erigeron* affects cold and mountainous countries, and are of easy culture so long as they can get moisture, but not stagnant moisture. There are very few varieties, however, worth cultivation.

effect. The wall surrounding my own garden was built five years ago; it is five feet high and eighteen inches thick, built of limestone, and finished off on top in a rounded fashion. The wall, like the garden, is dry and sunny. By good luck (bad luck according to the builder!) a sharp frost came on just as the top was finished, with the result that the mortar never set properly, and can to some extent be dug out with a trowel or knife. Into chinks and little hollows many small plants have been fitted, sometimes with a little earth, sometimes merely by lifting slightly one of the smaller stones, slipping the root in, and pressing down the stone again. Almost all the species so planted have grown excellently. The following are spreading along

aizoides, *Armeria plantaginea*, *Artemisia pedemontana*, *Sedum Ewersii*, while holding their own have not yet made much progress.

R. LLOYD PRAEGER.

Verbenas.

To those who have grown verbenas, nothing need be said as to their beauty and usefulness in the flower garden, but to amateurs of limited knowledge and experience the verbenas will prove on trial an altogether delightful race of decorative plants. The flowers are produced on terminal heads, sometimes crowded and sometimes loose, but always beautiful. The range in colour is very wide; you may get, in fact

any shade (except pure yellow or black) from the purest white to the deepest blue. The verbenas belong to the same family as the common vervain, native to southern England, but rare in Ireland, and almost unknown in Scotland. Verbenas are found wild especially in tropical and sub-tropical America, but the garden varieties are mostly, if not all, the results of crossing and selection. Raised from seed they give endless variations as to shades of colours, and this to many people is a source of great interest and delight. Grown in light garden soil enriched with either decayed leaves or well-rotted manure, they thrive wonderfully, while striking effects may be produced by pegging down the stems along the earth, so as to produce erect, strong-growing laterals, each of which will end in a head of gay flowers. The effect is magnificent during summer and early autumn. Some people like to grow verbenas in pots, and for this purpose the varieties Miss Wilmott and Scarlet King are especially good, as well as Lovely Blue, Maiden's Blush, Princess of Wales, Snow Flake, and Queen of the Whites.

Potash.

POTASH is one of the food substances required by plants, and must therefore be present in all fertile soils. If not already there in sufficient quantity it should be supplied by the cultivator. With some plants potash appears to be the "dominant" constituent of the soil, and if this is plentiful the plant can, as a rule, forage successfully after the other necessary ingredients of its food. "Root" crops like turnips and beet, leguminous plants (peas and beans), and to a considerable extent fruit trees, are particularly benefited by potash. In all cases it would appear that the starch-making power of the foliage is very materially influenced by the presence of potash salts in the sap. It will be well for gardeners to remember that potash is especially required by plants and shoots in their very early stages of growth and also later in the season, when the flowers appear and the fruits are maturing. Light sandy soils, chalky soils and peaty soils are usually deficient in potash. Potash is usually supplied in the form of kainit, but a much purer form of potash "manure" is the sulphate of potash. Kainit is a mixture of potash, common salt and magnesia, and is entirely unsuited for summer work in the garden. The soluble salt and magnesia are really harmful to living roots, and should, therefore, only be applied to soils in winter, when the poisonous ingredients are washed out before the arrival of spring. With the sulphate of potash we are dealing with a pure salt, and therefore it goes much farther. While kainit is applied at the rate of from two to four ounces per square yard only about one ounce, finely powdered, of the sulphate will be required for the same area. From some recent experimental work it would seem that both potash and lime fertilisers might be used with advantage in mushroom culture, but care should be taken to apply the potash in the form of the pure salt.

Hoeing.

THERE is no more effective aid to the healthy growth of crops than hoeing. It makes the surface

of the soil loose and keeps open the pores leading down into the soil. Hence it encourages soil ventilation and that free interchange of gases that means so much to working roots. The Dutch type of hoe is the one to use. By using it the ground is not trodden over after the hoeing. If hoeing is done when and as often as necessary there will be no chance of weeds becoming the least troublesome.

There is a further advantage in hoeing, inasmuch as it tends to keep the surface of the soil fine-grained and powdery, and this in turn acts as a mulch and prevents loss of water by evaporation.

Freesias.

THESE delicious perfumed flowers should be grown in every garden about the end of July. Pot them up in six-inch pots, about eight to ten bulbs in a pot. The compost should be three parts loam, one part leaf-mould, with a six-inch pot full of crushed bones. Place the pots, which contain the bulbs, in a cold frame on a bottom of cold ashes, and give very little water till the bulbs begin to grow; give just enough to keep the soil in the pots moist. As soon as frost appears remove the plants to a warm house, and place them on a shelf near the glass. When they show their flower buds, which will be about the first of January, they will require more water. An occasional watering with manure water will greatly benefit them. When the bulbs have done flowering continue to water them till the tops die off. Let the pots remain on the shelf in the full light of the sun for at least four weeks after you stop watering, for the secrets of success in freesia growing is the ripening of the bulbs.

J. DEVINE.

MR. WM. HANNON, of Gourtacousin, Athlone, writes to say that he has an exceptionally fine variety of apple apparently new to orchards, which he is anxious to introduce into commerce. It was in full flower on the 27th of last month, the fruit ripens in August, and is of fine flavour and handsome appearance. He invites correspondence.

A NEW IRISH WEEKLY.—We sincerely welcome the appearance of *The Irish Industrial Journal*, a thoroughly up-to-date and progressive weekly very much needed in this country. Those of our readers interested in the present industrial movement in Ireland will read its pages with much interest and profit. We are glad to note that the literary side of journalism is not overlooked in its attractive pages.

MR. WM. BAYLOR HARTLAND has sent us a box of exceptionally fine blooms of the daffodil, bearing his name. They seem to us to be much improved in substance and purity of colour in comparison with specimens seen in former years. As we go to press a second box has arrived, containing bunches of five varieties of strikingly handsome Narcissi—Lorna Doone, Rosa Bedford, Cressida, Oresko and King of the Poets. We have no room left to describe these, but hope to refer to them at another time.

MIGRATION OF GALL MITES.—Fruit growers may be reminded that the gall mites that have been passing the winter in the "big buds" of affected black currant bushes will awaken during the present month, and leaving the old and now dried up buds that sheltered them seek the younger buds that are now in a fit condition to receive them. May and June are the only months of the year when spraying is of the least use in preventing the spread of these pests. In case any reader is unfamiliar with the appearance of a black currant twig suffering from "mite" we give an illustration of the top

of a branch photographed in March showing very clearly the big buds containing the hibernating mites.

MARCH MARIGOLDS.—We have often wondered why the March marigold is not more highly prized, and therefore more often utilised as a decorative plant. It is one of our most handsome aquatics. Growing in masses by the side of a stream or lake, it presents in spring a glorious patch of colour that glows even more brilliantly than burnished gold when the sunlight glitters from its wealth of bloom, inlaid upon an almost tropical-like foliage of rich green.

MR. T. FISHER UNWIN will shortly publish Mr. W. S. Rogers' long promised book, "Garden Planning." Those who made acquaintance with "Villa Gardens" will welcome the larger and more comprehensive book, in which the whole subject of garden designing is treated fully and in a practical manner. A feature of the book will be a series of plans to scale for all possible sites and aspects. In all, there will be 150 practical drawings.

HORTICULTURAL SHOW CARDS.—A neat series of Exhibitors' Show Cards has been prepared by the management of IRISH GARDENING for use at Horticultural Shows. These will be supplied (with name of the Society printed on each card) free in desired quantities to Secretaries of Horticultural Societies on application to the Manager, IRISH GARDENING, Ltd., 53 Upper Sackville Street, Dublin.



The evening sun is sinking low in shades of deepening red,

The water-fowl is crooning softly from its willow bed.
Selené throws her sombre cloak about a world of sleep,
And through a curtain formed of clouds her nightly watch doth keep.
—Country Life.

Electricity in Relation to Plant Growth.

MR. J. H. PRIESTLEY, of the University of Bristol, contributes an interesting article on "Overhead Electrical Discharges and Plant Growth" to the current number of the journal of the (English) Board of Agriculture. This subject has been before referred to in these pages, and the present paper gives an account of the further experimental work carried on as a continuation of the researches therein summarised. The results seem to prove that "the passage of small electric currents through the plant is beneficial to it, and tends to increase the yield, and often to lessen the time in which the yield is usually obtainable." It is a well-known fact that the electrical potential of the air is always higher than that of the plant, and therefore it is highly probable that even under normal conditions a slight electrical current passes from air to soil through the plant. Furthermore, there is experimental evidence that electrified plants have their physiological functions quickened—the passage of the current through the tissues accelerates respiration, transpiration and starch formation. It heightens vitality also and increases the power of a crop to resist disease. It has been further suggested that electrification may also result in increasing the natural supply of nitrate, and that the continuous supply of this extremely soluble and highly essential plant food in our tillage lands is really kept up by the very slight but continuous discharges of current electricity from air to soil through the growing crops. If it is so then it is logical to believe that any artificial increase of this current within certain limits would tend to accelerate the growth and development of plants.

The electrification is effected by a system of overhead wires connected with a generating electrical machine, which may be installed either in a greenhouse or in the open ground. Some of the results obtained through a series of years are given by Mr. Priestley, and the following are taken as examples from his tables:—

Year	Crop	Increase of electrified over non-electrified
1905	Cucumbers	17 per cent.
"	Strawberries, 5 years old	36 " "
"	" 1 year "	80 " " and more runners
"	Tomatoes	No difference
1906	Wheat	29 per cent.
1907	"	29 " "
"	Strawberries	25 " "
1908	"	Decrease 9 per cent. (dry season)
"	Wheat	24 per cent.
"	Cucumbers	Much quicker formation of fruit

The subject is one of considerable interest, and also appears to be one of some practical importance to growers, for although the present expense of an installation may not justify its immediate adoption in practical market gardening it is certainly suggestive, and may well develop into a special system of forcing either for earliness or for increased yield.



Flower Garden and Pleasure Grounds.

By E. KNOWLDIN, F.R.H.S.

"Come May with all thy flowers,
Thy sweetly smelling thorn,
Thy cooling evening showers.
And fragrant breath at morn."

IT is the poet's ideal of the "merrie" month, yet how often are such ideals swallowed up in foolish facts. "Cooling evening showers" sound nice if they do not turn to rattling hail; the "fragrant breath at morn" is enjoyable when not congealed into a stinging white frost, and this is what we have to be prepared for, and when the cooling evening shower of hail comes look out for the fragrant frost next morning. It was the rule where we spent part of our probation (alas, how long ago!) that whenever the thermometer dropped to 40 by 6 p.m. at this season all covering was put on, and this brings us to the unqualified usefulness of skeleton frames, in which the bulk of the bedding plants, as well as the chrysanthemums in 4, 5, or 6-inch pots, as the case may be, awaiting their final potting at the end of the month, can have their "hardening off" properly, that is to all intents and purposes the plants are treated to outside conditions whilst being protected from spasmodic outward influences as they arise. The skeleton frame may *not be much* more than some of the temporary sheltering devised by men whose ingenuity is proverbial (or ought to be), but it *is* more without being an eyesore to those who object to even the manufacturing department of the garden (the glass) taking on a deshabille look at any time to await, for long enough perhaps, one of Aunt Dinah's "grand clearings up." The skeleton frame or pit is pretty well expressed in the name, and if constructed of planed and painted timber on a suitable site in proximity to the glass may be considered a permanent institution worthy of its surroundings. For all ordinary purposes two feet in depth at back may be sufficient, one foot in front, the soil being further excavated nine inches in depth, with a good three-inch coal ash bottom. Temporary bars which can be removed as required giving support to the mats, the most useful width of such frames being what can be covered with a full-sized Archangel mat, the back taking a mat lengthways when occasion demands it. Needless to descant on the hundred uses to which such frames can be put all the year round, for where erected we rarely see them idle.

"May with all thy flowers!" Thou givest us nothing more gorgeous than the tulips, May flowering as they are termed, and with Gesneriana, Golden crown, and Picotee, crimson, gold, and white, the white of Picotee being slightly warmed up with a marginal carmine flush, we reach our goal in brilliant effect in that bedding which finds them *en masse*. *Macrospeila* as a substitute for that fine form of Gesneriana known as *spathulata*, is hardier, and has the virtue of violet scent, those are the pros., the cons. being that it cannot vie in effect with the former, and is later, the latest of all in our experience, and that is a drawback as a bedder. This late spring we anticipate both wallflowers and the above tulips will be aggravatingly at their best about the last week of the month, but with the advent of June each day's delay in the summer planting means pawning the near future to gratify the immediate present. It is the penalty paid under the dual system of cropping the formal flower garden. Whatever course is pursued, however, it is essentially necessary that well thought-out methods should obviate muddle, and the transition from spring to summer bedding be carried on and out systematically to ensure justice being done to all concerned, and that stock for another spring routine *is* concerned cannot be overlooked.

The sites for such spring plants as are to be reserved should be at once prepared in order that as they are lifted there shall be no ill treatment in throwing aside till the summer planting is complete. First the bulbs, that is apart from those fortunate cases where a fresh lot can be purchased each season which we have no hesitation in saying is the better way. Presumably the chief of these will be the tulips, although it applies to all. We like to have a nice bit of sandy border, preferably under a wall, neither the hottest nor the coldest aspect, and in this planting each kind by opening shallow trenches and laying them in *as they are taken up*, each lot being substantially labelled. For purity of stock it is as well to pull out any rogues that appear in the beds as the blooms show them; later on, when ripened off, they can be lifted, cleaned, and stored with the labels, those not wanted for bedding eventually going out as wildlings in the shrubberies or elsewhere. A well prepared north border, or in the cultivated ground between the fruit bushes, is good for transplanting the aubrietia daisies and similar things as they are lifted. We have found it the better way to treat the aubrietia at this season similar to box edging—viz., topping and tailing the tufts, planting low and treading in tight,

giving a few waterings if heaven denies the generous gift.

Apreros of the summer planting, which we shall probably be struggling with before our good editor gets out his next number, we may not forget that some of the simplest things make the most effective beds, and there are some things one even dares to mix (in colour). If any weatherwise ones will advise us that we are going to have a summery summer we advise them to have a good substantial bed or two of mixed petunias, and at planting insert a few sprays from a superannuated birch broom (a virgin broom is better) through them as a something for the plants to lean on when age gives them that tired appearance, and they only seem too pleased of the excuse of a puff of wind to flop over. Mixed seedling verbenas of a good strain make capital beds, covering quickly, and flowering gaily to the cold end. Failing a stock of such things our own obliging nurserymen will step in at small cost. Whenever we take our walks abroad at this season how many thousands of good, cheap, effective things we see in our nurseries waiting to fill the want! Bedding asters should not be overlooked—fragrant stocks are fine, edging plants of such things as lobelia, alyssum Snowflake, and *Centaurea candidissima* (most valuable of all the silver-foliaged plants) can be had by the dozen, hundred, or thousand, with golden feather galore, from our Irish plant emporiums. By the way, we have emphatically condemned the double lobelia, Kate Mallard, as a bedding plant, and Mr. Bedford as emphatically shouts its praises back from Kildare. We can only, presumably, both of us, reason from what we know.

Heigho! But it is a weary world, my masters, this gardening world, and there is a good deal of vanity and vexation of the spirit in this subject we were cajoled into under editorial diplomacy! We have just had a post-card to hurry up, and when it's time to stop we feel but beginning. The bedding, of course, has to be, and it is the only sane system for certain positions; but, tell it not in Gath! We find more pleasure in a yard of mixed border than a whole bevy of beds, yet our mixed border would horrify an orthodox hardy plantsman with its odds and ends which we like to stick in at the wind up of the bedding—heliotropes, scented geraniums, and all sorts of smelly things, including not a few annuals, with other corrupt practices.

The Fruit Grounds.

By A. BARKER, Carrigoran, Newmarket-on-Fergus,
Co. Clare.

WELCOME, merry month of May. Well, it is not, comparatively speaking, a very busy month in the fruit grounds, but as it is often a very busy month with some of our insect enemies, be careful to attack any or all of them on their very first appearance (a spraying in time may not save nine), but early spraying is most effective, and frequently saves the trouble of doing the whole over again before the pests are quite exterminated. Black currants are very subject to attacks of aphids this month, and these aphids multiply and spread so rapidly that if not promptly dealt with there is great danger of the crop of fruit

being seriously injured. All seedsmen sell a variety of compounds for the destruction of these as of all other garden pests, with the necessary instructions for use. Quassia extract is a most favoured remedy. Soft soap is a simple and effective remedy against all aphids, and where a great number of bushes are to be sprayed it may be used as follows:—Take $3\frac{1}{2}$ lbs. soft soap, place it in a bucket, and pour a couple of gallons of boiling water over it, and stir with a lath until the soft soap is completely dissolved; pour this into such a utensil as an empty paraffin oil barrel, and fill up the barrel with cold soft water. (If sufficient hot water is used to make the whole new milk warm the mixture is more effective.) Soft soaps vary a good deal, and to make sure of this mixture being strong enough, take a leaf infested with fly and dip into the solution. If the fly is not quickly killed add another $\frac{1}{2}$ lb. of dissolved soft soap. Another thoroughly effective spray may be made by dissolving soft soap at the rate of $\frac{1}{2}$ lb. to 10 gallons of water, and the strained liquid obtained by boiling 1 lb. of quassia chips for at least one hour in a couple of gallons of water. First boil quassia chips according to quantity of solution to be used for spraying; then dissolve soft soap in a bucket of boiling water, and pour into the requisite quantity of water and add the quassia liquid. This latter solution may be used to destroy aphids on any kind of fruit trees, especially on plums, and against black or green aphids on cherries. In case that aphids has been unnoticed until many of the leaves have curled up, the curled leaves must be picked off and burned, as any amount of spraying will not reach the insects inside the curl on the leaf.

Red currants may be sprayed with Swift's arsenate of lead (as recommended in my last notes) for the destruction of caterpillars, but do not spray gooseberries with this poisonous compound now, as the berries are so near being used for home consumption or for market.

Where apple scab is troublesome it is advisable to spray with weak Bordeaux mixture—*i.e.*, 3 lbs. sulphate of copper and $1\frac{1}{2}$ lbs. quicklime to 50 gallons of water. prepare as follows:—two or three hours before being required for use tie up in a canvas bag or piece of canvas (or sacking) the required quantity of sulphate of copper, and place in 2 or 3 gallons of soft water in a tub (wooden tub) or barrel to dissolve; place the quicklime in some receptacle, and pour over it sufficient water to slake it. When thoroughly slaked strain into the barrel and add more soft water to bring up to required quantity; be careful to keep well stirred while using.

Spray when the petals of blossoms are falling, and again when the apples are the size of peas (or little larger). This is particularly applicable to late varieties of apples, which must be left on trees late in the autumn. Some of the best late cooking apples are much more liable than others to disfigurement by apple scab (Alfriston and Dumelow's Seedling for instance); in some seasons they suffer severely if not sprayed. Keep the ground frequently hoed under fruit trees to aerate the ground and keep down weeds. Give new planted fruit trees liberal waterings in the event of hot dry weather setting in, and especially late planted trees.

Strawberries should have a mulch of clean straw placed under the leaves and fruits to keep the fruits clean and free from grit while ripening, and if a dressing of lime and soot mixed can be sprinkled over the ground under the plants before putting on the straw it acts as a great protection against snails damaging the fruits in damp or wet seasons. If the beds were not liberally mulched with good farmyard manure, as previously advised, give a dressing of nitrate of soda, guano or some quick-acting fertiliser as soon as the fruits are set; this will considerably improve the yield of fruit. Give liberal waterings if dry weather prevails while the fruit is swelling.

Overhaul and repair old netting, and where new netting is required, lose no time in placing the order for it, so as to have a good supply in hand for covering the beds as soon as the fruit commences to colour. (It is almost impossible to preserve strawberries from birds without netting.) Where strawberries are to be marketed have a good supply of punnets and crates in hand before the month is out, and so soon as an approximate can be formed of the gooseberry crop likely to come to maturity endeavour to obtain orders for same as near home as possible at reasonable prices. Look round the grafting occasionally, fill up any flaws in the grafting wax, or if clay has been used, fill up any cracks that may appear with moistened clay. If the clay seems inclined to crack badly a little moss tied over it will prevent the cracking.

A Calendar for Amateurs.

GOOSEBERRIES.—Where table dessert is especially required, the fruit should be thinned. A good mulching should be applied if not already done. While the fruits are swelling, copious watering is required, also manure-water and some good artificial manure, to obtain the best results. Keep the trees well open to air and sun by pinching back the side growths to about five or six leaves.

RASPBERRIES.—Give a good mulching, and allow plenty of light and air to get to the canes. During dry weather water must be freely applied.

APPLE TREES.—Keep newly planted trees watered and mulched. Have a look out for the apple blossom weevil. Blossoms so affected turn brown as if affected by frost. Close examination shows the insect or traces of it. If the tree is shaken the weevils will fall out; place cloths to catch them, then destroy. Look out for American blight.

STRAWBERRIES.—Mulch, if not already done, with long litter. Cover with nets to keep off frosts and birds.

FLOWER GARDEN.—Preparation must be made at once for the bedding out of plants by the end of this month. Gradually harden exposure, but be on the look out for frosts. See that the plants have sufficient water to thoroughly wet the whole mass of soil in the pots.

Notes from Glasnevin.

By R. M. POLLOCK.

CORYDALIS BRACTEATA is a native of Siberia, and although delicate looking is perfectly hardy and flowers during April and May. Numerous flowers are borne loosely on stems from twelve to eighteen inches high, and each flower has at its base a large green bract, from which the plant gets its specific name.

Another member of this genus, but a native of China, is *C. Cheilanthesifolia*, the foliage of which resembles at a distance a fern. This species also has yellow flowers, but of a deeper colour and smaller than *C. bracteata*, and it flowers later in the season. Both these plants will do in shade.

Among other charming Alpine plants suitable for rock work may be noted the *Androsaces*. *A. Laggeri*, where it does well, is a pretty plant with small rosettes of dark-green pointed foliage, and small pink flowers in a head. This should also be planted in a shady spot.

A. sarmentosa is a species from the Himalayas, having pink flowers with white eyes. The main plant sends out runners which have at the end small rosettes, and these can be pegged down to take root.

A. Chumbyi is a hybrid between *sarmentosa* and *villosa*, and also has pink flowers and red stems and very pretty woolly grey foliage.

PROPAGATION.—The cold frames vacated by the plants being hardened off for summer bedding can be used for striking cuttings for next spring's bedding and for other soft-wooded plants such as *aubrietias*, *alyssum*, *arabis*, &c. Make sowings of annuals for succession where they are intended to grow, and biennials for next year. Wallflowers should be sown now for autumn decoration. Top-dress all hardy ferns, and remove weeds and litter. A little soot sprinkled over the top of the plants makes a good fertiliser. All carnations should be out in the open by the end of this month, also *chrysanthemums*.

DAHLIAS should be planted out by the end of this month before the plants are too large. A large plant receives more check by transplanting, and is likely to be more affected by frost. Dip in an insecticide a day before transplanting. A heavy soil suits these plants, but it must be well worked.

CLIMBING PLANTS.—For present planting what could be better than scarlet runner beans? They are quick growers, and useful as well as beautiful. Plant seeds two and a half inches deep and two together about three inches apart. They will cover poles or arches to a height of eight feet, and produce a really striking effect. Other climbers that may be used are hops, canary creeper, and tall nasturtium.

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IRISH GARDENING

VOLUME V.
No. 52

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

JUNE
1910

Bacteria in Relation to Crops

I. AMMONIFICATION



OIL is the original source from which our crops obtain most of their food. With the exception of carbon, which is extracted by the leaves from the carbonic acid gas of the air, everything else is absorbed by the roots from the soil. It is well understood

by all practical gardeners that the fertility of the soil almost wholly depends upon the stock of suitable nitrogen, phosphorus, or potassic compounds that are present in the soil. But it is not merely necessary that these substances should be there, as that alone may mean very little to the wants of the crop. The food stuffs must be there in a form in which the roots can absorb them. The needful compounds must be soluble in water. But soluble compounds are difficult to retain in the soil; they are very liable to escape in the drainage water. The most difficult of all to retain are the nitrates, and therefore the fertility of a soil often depends upon the amount of its available nitrogen. To make our points clear to non-chemical readers let us digress for a moment in order to explain that *nitrogen* in a free or uncombined state exists in the air to the extent of three-quarters of its volume. But in this free or uncombined condition it is useless to crops. Nitrogen forms one of the necessary constituents of *ammonia*, and ammonia readily unites with acids to form salts

of ammonia. Another compound of nitrogen is *nitrate*—such as nitrate of soda, nitrate of potash, or nitrate of lime. Salts of ammonia and nitrates can be used by crops as suppliers of nitrogen. The highest or most complex nitrogen compound is *albumen* or *protein*, but this can only be produced within the body of a plant, and under the influence of life, and it is to enable plants to manufacture this most essential of all foods that they require to be supplied with either nitrates or salts of ammonia.

To return to our main subject. The sources of nitrogen loss to the soil are mainly but not entirely due to the nitrogen in the form of albumen, &c., removed in the crops, and to nitrates lost by drainage. What are the sources of the soil's gain in nitrogen? The residues of crops, farmyard manure, or artificial manures containing nitrogen—such as nitrate of soda or sulphate of ammonia. The two latter compounds, being readily soluble in water, can be taken up by the roots immediately they are applied to the soil. It is exactly because these fertilisers are so soluble that they should be added in relatively small quantities, as otherwise they form too strong solutions for the delicate root-hairs. But what about the residue of crops and farmyard manure, the nitrogen of which is in the form of protein? Protein as it exists is useless to the crop; the roots cannot take it in. Before they can do so the protein must be broken down into simpler compounds, and it is a well ascertained fact that they are so broken down in the soil, and one of the decay

products is ammonia. This brings us to the next point, and a point of extreme interest to gardeners. By what process is this ammonification of organic matter in the soil brought about? It is brought about through the action of specific kinds of bacteria. These are tiny forms of vegetable life of extreme minuteness that exist in truly enormous numbers in our cultivated soils. These particular races of bacteria attack the waste proteins, and ferment them, and ammonia is one of the products formed.

The nutrition of crops depends therefore very largely upon the intensity of ammonification in soils, and it is obviously a matter of much importance to know, first, if we can in any way encourage the work of ammonification, and, secondly, if so, how? Well, the all-important thing is to supply the minute organisms with abundance of air, as without a sufficiency of oxygen they cannot thrive. To effect this the soil must be well drained; if it is in any way water-logged, then the air is kept out of the soil and an unhealthy fermentation sets in. Good tillage increases ammonification, as this breaks up the clod, admits more air, and affords a more extensive field for bacterial action. Hoeing during the summer months is also a great aid, as it not only keeps the surface open and helps ventilation but it also tends to conserve moisture, without which no bacterial fermentation can go on. Again, the presence of lime is an important factor; it corrects acidity. Acids are liberated during the process of decay, and bacteria are checked, or even stopped, in their growth in the presence of acids. Lime unites with, and therefore neutralises, acids; hence its utility in this connection.

Keeping in mind the importance of ammonification, and knowing the conditions that favour its action, a good deal can be done to improve and sustain the fertility of our soils. From what has been said one can easily see why broken-up old pastures give us such productive soils. The continuous sward so seals the surface that very little air can reach the soil, and therefore the decay bacteria develop very slowly and the stock of decomposable organic matter increases from year to year. But when the pasture is broken up and the air is free to permeate the soil the bacteria increase enormously and much ammonia is liberated.

French Gardening.

By A. V. BRICKENDEX, Fiddown Fruit and Flower Farm, near Waterford.

SO much attention has recently been paid in England to French gardening that it is surprising so little notice of this interesting branch of gardening has been taken in Ireland. London is, of course, the chief distributing centre for garden produce throughout the Kingdom. Formerly France had the entire monopoly in this market with early vegetables, &c., but English growers, by adopting French methods, are every year obtaining a larger share in this business.

The situation of Ireland, however, should give her peculiar advantages in supplying such centres as Bristol, Liverpool and Glasgow, not to speak of her own towns. Neither climate nor soil are very important factors in French gardening, but it is obvious that what has been shown to succeed so well in England should also succeed in Ireland.

Briefly, the system of these Continental gardeners or "maraîchers" is to obtain a succession of choice flowers, fruit, and vegetables in advance of those grown in the ordinary way. This is accomplished by means of frames, cloches or bell glasses, and stable manure, and is really an elaboration of the ordinary hot-bed system.

The frames are made on the French pattern, which admit the maximum amount of light, unlike the unwieldy and cumbersome English ones. These French frames are, however, very simple to make, though it is advisable to buy the "lights" ready-made, only glazing them at home. Seven or eight crops should be obtained from the frames during the year. Cloches are used for very much the same purposes as frames, but have certain advantages over these in raising seedlings and some varieties of plants.

The illustration is of part of my French garden, which is near Waterford, and will give an idea of what cloches in use are like.

The hot-beds are made up and arranged according to a special system, which it is unnecessary to fully describe here. The manure is used to enrich the surface soil at the end of the season when it has lost its heating properties. In time the surface soil

becomes very rich and quite black. It is then very valuable.

Up to the present the most successful crops for French gardening have been found to be Canteloupe melons, asparagus, carrots, celery, cucumbers, lettuces, mushrooms, peas, radishes, tomatoes, turnips, strawberries, and several varieties of flowers, but there are endless possibilities.

Unfortunately success cannot be guaranteed with book knowledge alone, as so much

on a large scale, as in most things, one should advance with caution from small beginnings. It is considered that about £400 is required to thoroughly equip an acre according to the French system. But most people start with only a few frames in a suitable corner of their garden, and just as good profits proportionately may be obtained. I myself studied the system with two ladies in Berkshire who have a *marais* to manage their garden. They have him still, and are extraordinarily success-



AT WORK IN THE "FRENCH" GARDEN AT FIDDOWN.

depends on attention to details which can only be acquired by training. This is realised in England, where many gardeners get French *marais* to demonstrate their system. But given this training the would-be French gardener may regard the following as three *sine qua non*s.

(1) There must be a good water supply. (2) Stable manure must be obtainable. (3) Proximity to a station or market is essential. It is also advisable that the garden should slope to the south.

Many people have an idea that an enormous capital is necessary to start a garden of this kind. But it is by no means necessary to start

ful. French gardening seems to be specially suitable for women, as there is a great deal of light and interesting work in connection with the system.



Gooseberries on Trellises

THERE are certain advantages arising from growing gooseberries on a trellis—the fruit is easily gathered, and by using different sorts the season may be considerably prolonged. Posts may be placed about ten feet asunder, and four wires (a foot apart) run through holes in the series of upright posts. Prune so as to leave just sufficient old and young shoots to nicely furnish the trellis. Mulching the ground will prove beneficial to the crop.



Garden Making

By L. J. HUMPHREY, Instructor in School Gardening
under the Department of Agriculture and Technical
Instruction.

THERE are some principles which apply to the making of gardens, and no matter how small a garden may be these principles, which are really matters of common sense, should not be altogether disregarded. For one thing, the paths of a garden are intended to be the thoroughfares along which traffic will pass, and they should, as a rule, lead directly from point to point. Curved paths and winding walks must be of that design only because of the necessity for curving or winding. The track over a mountain or through a wood winds or curves because of obstructions, such as trees or rocks, which bar the travellers' way, and in a garden something must be substituted for such natural obstacles if paths are to proceed in serpentine fashion. Without this provision garden paths become meaningless ways, and a walk along them a mental weariness. Unconsciously one looks for a reason for such a curve or such a shape, and if there is no obvious reason there is a feeling of annoyance which should be quite foreign to the garden. This searching for a reason for making beds of elaborate shapes has brought into vogue gardens of beds with shapes of hearts and stars which at once yield up the reason of their shape in their resemblance to something outside the garden. But such beds do nothing for the garden as a whole. Nicely planted they provide a splash of colour, and perhaps break a monotonous patch. This, however, is not the ideal of the gardener, who is, perhaps, an artist, and who, as an artist, thinks of his picture as a whole. A small garden, or indeed any garden, can be much improved in appearance by planting thickly close to the boundaries. The walls or fences are then hidden by the plants growing in front of them, and seen from a little distance the level centre of the garden appears to pass naturally into an undulating bank of shrubs and plants, which fit in with the view beyond. In the corners borders may be a little wider to allow of the planting of more massive specimens, and here and there through the garden similar large specimens may be brought to the front of the borders in which they are growing to provide a point up to which the further planting, by the use of plants of a gradually increasing size, can lead. Where this is done the border may curve outwards to apparently avoid the shrub, and so give variety to the garden.

The width of the paths to be made will depend on the size of the garden and the manner of its arrangement, but both paths and borders should be of ample width, and borders at the foot of a wall or other fence should be at least as wide as the fence is high. Sometimes paths can be dispensed with altogether, and this results in a great saving of labour. In such circumstances a grass lawn forms the boundary of the beds, and serves to connect the various parts of the garden. The green of the grass provides an effective setting to the borders, and all the troublesome operations, weeding, rolling and raking of gravel walks, are avoided, the only work to be done regularly to the lawn being the mowing of the grass and the periodical trimming of the lawn edges. In winter, grass is frequently unpleasantly damp for walking upon, and in summer much traffic wears down the grass, leaving bare, unsightly patches. These disadvantages must be weighed against the advantages of appearance and general usefulness. A simple arrangement for gardens such as are frequently attached to terrace houses is one in which a grass plot occupies the centre of the garden, with comparatively wide surrounding borders, and with, perhaps, a seat or arbour in one of the far corners.

The labour involved in the planting of a garden of this kind is inconsiderable, and the effect is at all times pleasing. Even in this there is scope for tasteful planting, and use should be made of deciduous and evergreen shrubs, while here and there a tree can be planted to raise the level which might otherwise become too monotonous. Sometimes, despite efforts towards irregularity, the plants in the border will resolve themselves into lines which are not desirable in the garden borders. When this is the case triangular groups of three similar plants will help to vary the arrangement. The triangles may be of all kinds, and their size may vary to almost any extent, and while in some groups the apex of the triangle may be towards the front, in others the arrangement can be reversed with good effect. This method of planting by grouping similar plants together provides the masses of colour which the soul of the gardener loves, but it avoids those straight soldier-like lines which destroy the individuality of the plant. In gardens which are a little larger than the average builder allows to his modern erections, attractiveness can be given to the garden by hiding some part of it from the general view. Just how this can be managed will depend on the form, size, and levels of the site, but almost any plan can be adopted that is not too obviously artificial. For example, a path can be made to dip down into a valley, having gently sloping sides. These sides can then be planted with rock and Alpine plants, with a background of shrubs, forming a screen, hiding this little surprise from the rest of the garden. The soil removed in lowering the walk will raise the ground on either side and form the "hill" on which the shrubs are planted. In another way this privacy for some special spot may be obtained by interrupting one of the borders and placing a seat at the back of the space thus left, using small plantations of trees and shrubs to screen the spot from view. Such arrangements will not only be pleasing in themselves but will add to the apparent size of the garden, and will greatly increase its interest. Hedges, though often very

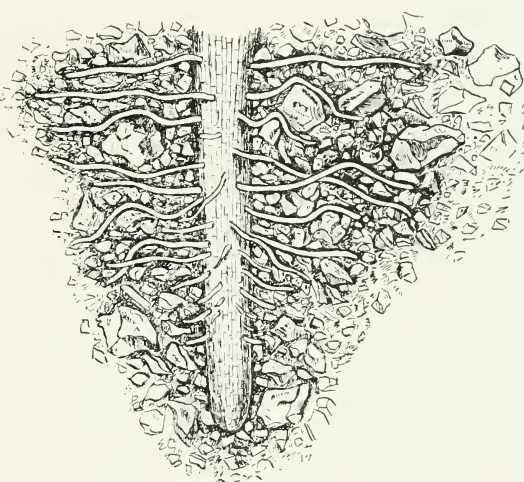
picturesque in large grounds, are not very suitable for small gardens, as when they flourish they impoverish the soil for the plants growing near them, and except as boundaries they cut up the garden too severely and formally. For the latter reason, and also to avoid the necessity for much wearying labour, flower beds are best made of a good size and of simple outline. It is an easier task to lay out beds which are circular, elliptical or oblong than those of intricate pattern or elaborate design, and such beds are more easily kept in a neat and tidy condition. A little experience of beds of wonderful shape will quickly prove that it is the edges

which are troublesome to maintain, as so soon as the plants in the centre are established there is no difficulty in hoeing the soil and destroying the weeds as they appear, while the edges remain a constant and increasingly difficult problem. But beds are too formal and too stiff for small gardens, and bedding out is on too stereotyped a plan to be worth imitating under such conditions. There should instead be a freedom and an individuality about the home garden which large gardens can seldom provide. The ideal is perhaps an impossible one, but there is a need for an "impressionist" school of gardeners who will plan gardens which will suggest and not define, leaving room for imagination to clothe our plants with something more than a varietal name and a place in a scheme of classification.

The Soil.

AN intelligent knowledge of soil is the foundation of good gardening. Beginners have, as a rule, very vague notions as to either what a soil is or what is required of it. The first thing to recognise is that a soil must provide a medium solid enough to afford a firm root hold, loose enough to allow of the entrance of air to the breathing roots, and so finely granular as will enable it to hold a fair stock of moisture. The second thing to remember is that the soil must be of such a character as will enable it to furnish enough soluble salts of the right sort as will supply all the requirements of the crop.

The best natural type of soil for gardening purposes is a loam. But what is a loam? asks the amateur. Let us try to explain. There are two extreme types of soil, the sandy soil and the clay. An equal mixture of these form the loam. A light loam has a higher percentage of sand, a strong loam a higher percentage of clay. If one carefully observes the characteristics of the two extreme cases in the field, particularly in relation to the character of their natural vegetation, a good deal of suggestive information may be found that can, with much advantage, be afterwards applied to gardening.



THE SOIL IN RELATION TO THE ROOT.

This diagram is intended to show how the feeding tips of a root occupy the soil. Each soil particle has a surface film of moisture from which the root hairs absorb all the water required by the plant. The spaces between the particles are filled with damp air which the living roots require for breathing purposes. The best texture of soil for cultivated plants is when these pores are neither too narrow nor too wide. It is part of the art of potting plants to secure just that degree of texture that is best suited for the particular plant you wish to grow.

They are as insoluble as splinter of glass. So long as they are damp they can supply water and whatever happens to be dissolved in the water, but that is all. The vegetation that naturally grows in such soils have usually very long and very finely-branched roots that seek for water in the lower depths. They are plants the roots of which by long inheritance demand good drainage, which means an abundance of air among the soil particles. The foliage of such plants, too, have usually acquired special devices, whereby they secure reduced transpiration, and thus husband their often scanty supplies of water.

Let us now turn our attention to clay. Find real, pure clay. It has characters the very opposite of sand. The particles of clay are so very fine that it is impossible to see a single grain of it without the aid of a rather strong magnifying glass. If one takes up a little lump of it in water so as to separate the particles

Sand, it will be observed, is made up of small but yet easily seen grains of flinty material, often intermixed with glistening flakes of transparent mica. After rain it quickly dries, as water passes rapidly down through its relatively wide pores. There is plenty of air in such soils, as unless the water is held up by an impervious under layer, it never gets water-logged. It gets hotter during a summer's day and colder during a summer's night than other soils. A farmer would call it not only a poor soil but a hungry one. It has very little plant-food in it, and if manure is added to such a soil it rapidly disappears. The particles of sand themselves can offer nothing in the way of food to the roots of vege-

some idea will be formed of its extreme fineness of structure. The microscopical grains lie so closely together as to almost reduce its porosity to nothingness. That is why it is so stiff, so plastic when wet, so hard when dry. It holds up water because the water cannot pass through. It contains very little air. Added manures are well retained in its inconceivably narrow pores. But as in sands little grains themselves can give nothing in the way of food to plants. They are insoluble. It has, however, as we have just said, a strong power of holding what ever food is already present in it. The natural vegetation on such soil has thick roots with stout, coarse branches, and relatively few fibrils. They have adapted themselves to a condition of soil in which there is an extreme poverty of contained air. We are now in a position to understand the physical character of loam and appreciate its utility as a soil. It combines the properties of both sand and clay. It moderates the obvious disadvantage of both, and secures a mellowness of texture that renders it a fitter medium for the all round work of gardening.

But we have seen that *pure* sand and *pure* clay contributes nothing to the food supply of our plants; they are simply the physical basis of a soil, and only act as absorbers and retainers of plant-food. Where then does the plant-food come from that exists in all fertile soils? Chiefly from two sources. First, from the original rocks from which the sand and clay themselves were derived, and, second, from the decay of vegetable residues and animal excreta that exist in the soil. Rocks and rock fragments by their disintegration yield the minerals, while the organic matter or humus supply the nitrogen compounds required by crops. The latter, through the action of soil bacteria, give off ammonia which in turn gets changed to nitrate. All these released food stuffs—the potash, phosphoric acid, &c., and the nitrates—are more or less firmly held by the sand and clay until the roots of the plant absorb them in solution. But in addition to yielding food the organic matter helps to keep the loamy earth open, and, further, it increases the power of the soil to hold water.

We must not, however, forget to mention the part played by lime in soils. Lime tends to cause these minute particles of clay to run together into tiny groups, and therefore improves its texture. It corrects any tendency to acidity in soils, and is useful as a carrier of nitrogen into the plant. So far as vegetation as a whole is concerned, its presence in the soil is very beneficial. Some wild plants only grow in soils containing lime (such as clematis and rock roses), while others, like heaths and foxglove, dislike it so much that they invariably avoid them. All of which goes to show that if we wish to grow things successfully in our gardens we must study their natural requirements. When one considers the various requirements as to soil of the vast numbers of kinds of plants introduced into gardens, one sees the necessity of artificially making up the right kind of soil for each subject. The kind of soil, for example, that would suit the coarse roots of a pelargonium would be entirely unsuited for the finer root system of a heath. A knowledge of how to prepare soils for the different classes of plants is essential to intelligent culture, and with this article as a preliminary we propose to follow up the subject in succeeding articles.

Current Topics.

By C. F. BALL, Royal Botanic Gardens, Glasnevin.

AS was only natural the loss of King Edward VII. came as a great blow, and sorrow is expressed on every hand. He was well named Edward the Peacemaker, for his rule has knitted the Empire together in closer bonds. Many acts of kindness, done secretly and unostentatiously, will never be known, but what we know of his deeds show us that his was a rule of love. His diplomacy was said to be truth and frankness.

In spite of many duties and interests, King Edward cherished a liking for gardening. The gardens at Windsor and Sandringham were overhauled on his accession, and have been maintained as model establishments befitting a king.

In 1904 King Edward VII., accompanied by Queen Alexandra, publicly opened the English Royal Horticultural Society's Hall in Vincent Square, and his presence at the annual exhibition or Temple Show in May was evidence of his love for flowers. Every sympathy will be felt for Queen Alexandra; but while the Empire is cast into mourning we have the consolation that King George is fully qualified to take up the reins of government and to rule us in the same spirit as did his illustrious father.

The death of Major Enthoven, who was recently appointed Chief Officer of the London Parks, will recall the indignation of horticulturists throughout Britain at this appointment, after advertising for one well up in the horticultural arts and landscape gardening. The London County Council has now the opportunity to appoint a man who is really well fitted for the post. A really well educated horticulturist should have the first chance.

The parks of Edinburgh, Glasgow, and other towns testify to the fact that such an individual not only knows the duties which devolve on these positions, but are as good organisers as will be found in any profession.

The spring bedding at the People's Gardens was quite a feature, and well worth going a long way to see—in fact a visitor after seeing the Phoenix Park went a round of some of the leading London parks, and came back with the impression that the spring bedding at the Phoenix Park was an easy first. The beds have been a feast of colour, and some new combinations have been introduced by Mr. Anderson, with very telling effects, and are well worth imitating next year. A notebook is indispensable to a gardener, whether amateur or professional, for many admire and intend to copy beds or colour effects, but often when planting comes some item has probably slipped the memory, and if omitted would mar the whole.

A new bed which was very praiseworthy consisted of a broad border of the double *Arabis* mixed with Sutton's Royal Blue Forget-me-not; the centre was Blood Red Wallflowers through which Tulip Prince of Austria was planted; the rich orange flowers of the tulips just rising above the wallflowers made a gorgeous bed.

In another bed were four similar kinds of plants with the variety of wallflower changed from Blood Red to Eastern Queen, but this one change makes a bed far inferior to the former.

For those who admire contrast and striking colours, the mixture of Hyacinth King of the Blues and Tulip Keizerkroon will give just what is wanted, while a bed of Blood Red Wallflowers with Narcissus Barri conspicuous provides an old and much used combination.

A large square bed which showed up prominently consisted of the Double Arabis, flowering so profusely as to resemble a sheet of snow through which appeared the rich orange red flowers of Tulip Couleur Cardinal, the edging being in this bed Aubrietia Hendersoni. On either side of this square bed were oblong beds; one was soft toned in colour, consisting of a lavender Viola Mrs. George Price with the Poets' Narcissus edged with Double Arabis, the other had the Double Arabis for a ground work with Narcissus Barri conspicuous, and Tulip Duchesse de Parma dotted through, and edged with Aubrietia Hendersoni.

Another large and very telling bed was produced by Tulip Pink Beauty over a ground work of Aubrietia Hendersoni, with the Double Arabis for an edging.

The globular flowers of Tulip Bouton d'Or over the Royal Blue Forget-me-not, edged with Double Arabis, made a bright bed, although the yellow of the tulips rather dominated the bed.

Double Arabis was again used as an edging for mixed tulips of three kinds, and crocuses as a ground work. A prolonged display can be made by these beds if mixtures are not disliked—first the crocuses, then the Dutch Tulips, followed by May and the Darwin Tulips.

The public are always attracted by bright colour, and the long ribbon border provides even for them a plentitude. It consists of six varieties of plants, each kind making a broad band of colour all the way down the border.

The first band is Double Arabis, followed by Royal

Blue Forget-me-not, then Primrose Dame, Eastern Queen, Cloth of Gold, and Blood Red Wallflowers. If the position of the two latter kinds were reversed it would be an improvement, for in the back row the effect of the Blood Red Wallflowers is lost at a distance. These newer forms of Wallflowers are very useful for colour effect. At Sutton House, long borders on either side of a path are planted with these, and Forget-me-nots in blocks of colour, and, backed by espalier fruit trees in blossom, the effect is very gay and pleasing.



BERBERIS STENOPHYLLA.

B. Empetrifolia × *Darwinii*.

(From a plant in Phoenix Park, photographed by C. F. Pailin.)

Mr. T. Smith is not slow to recognise a good plant, and knows where to place it; note in the People's Gardens how the bright spring foliage of *Acer pseudo-platanus* *Brilliantissima* shows up at distance.

Three of the very best of May flowering shrubs are *Berberis stenophylla*, *Cytisus præcox*, and *Spiræa arguta*. At the park gate the two first named are planted together, and make a pleasing combination. These three are easy to grow and manage, reliable in flowering, and cannot be beaten by any newcomers, Chinese or otherwise, after this severe winter; while many half-hardy plants are still looking sick this trio is in its full glory. The photo shows *B. stenophylla*, which has been pruned hard. If left unpruned in good soil it will make long arching growths laden with flowers, and is more graceful in habit.

A bed in Leinster Lawn was very pleasing in effect, the colours harmonised well and were restful to the eye. The subjects used were *Hyacinth Queen of the Blues* and *Tulip Princess Marian*. The white tulips seemed all that was required to set off the delicate blue of the hyacinth.

At Glasnevin a combination which has been greatly admired by all is produced by *Rose la Reine* *Tulip* over the *Royal Blue Forget-me-not*; these two last-mentioned beds can be strongly recommended to those who want something fresh for next year.

Roses.

By O'DONEL BROWNE, M.D.



EXHIBITORS for the July show will have their hands full all this month, as much depends on the final preparations and getting ready for the show. Neglect of plants setting and carrying flower buds in June brings in its train no prizes in July. When plants have set their blooms, and all superfluous growth has been removed, great care must be constantly given to those that remain. Experience alone can tell you how many blooms a given tree of any variety can comfortably carry—by this I mean that some trees can throw five or six good flowers, whereas others can only accommodate two, if you require perfect flowers for the judges. A constant eye must be kept on the plants, for mildew, grubs, greenfly, besides injuries to the flowers by wind rubbing them against anything. Get your plants sprayed as soon as possible, and repeat the spraying every few days for greenfly if there, but

especially for mildew. There are various preparations advised by the handbook of the National Rose Society to combat this foul pest. Abol (non-poisonous), V2K, potassium sulphide, crude sulphuric acid, Jeyes' soft soap, mo-effic. Any of these, if used early in the season and repeated as often as is necessary, is perfectly reliable. The only great secret is to use a very fine spray—in fact, the solution should go from the syringe as a fine cloud, and the under sides of the foliage should get most of your attention. I have used several syringes, but to any one wishing to commence this year, I advise him to get the "Abol" syringe from the makers, Messrs. E. A. White, Ltd., Beltring, Paddock Wood, Kent. By carefully adjusting the screw arrangement in the nozzle, a spray of any thickness can be obtained. If you use the sulphuric acid solution through a sprayer or syringe be careful to give your syringe several wash-outs with plain water after use. The strength of the solution is one in a thousand of water. "Abol," made by Messrs. White, is recommended by the National Rose Society's committee. One ounce of liver of sulphur to five gallons of soft water, to which add before using; the white of two eggs is also a good recipe, and as the season gets older you may increase the strength. It will discolour paint, so beware of roses painted on lattice work and those on summer houses. Last year I used mo-effic, and it worked splendidly. One quarter of mo-effic will make one hundred quarts of spray solution. I have never tried V2K, but Mr. Mawley, secretary of the National Rose Society, advises and praises it. Rest assured, I am not writing this to give these stuffs a puffing up in this article; my sole motive is to help rosarians to have healthy, clean, vigorous plants and good flowers. All rosarians should have a copy of the "Enemies of the Rose," which is published by the National Rose Society, and which may be got only through a member for a half-a-crown. The coloured plates of moths, &c., are most beautifully done.

Your rose boxes should be overhauled and given a coat of dark green paint, as nothing looks more untidy than good flowers in a shoddy box. Rose tubes should be tested for leaks. What can be more melancholy than the look of a rose in the morning where no water is. A tinsmith can put all right with solder. When I began the show mania I kept a box mossed and tubed in a shady place where I used to stage flowers all on my lonesome, and many is the hint I learnt there in staging and blending colours. The usual way for most exhibitors is not to pay any heed to the morrow until a day or so before a show, and then all is rush. I have often thought that points should be given for neatness itself, or that the best staged box should receive a prize as an inducement to exhibitors to be careful in all their details. I also think that at all our local shows on the exhibitors' card should be a small tabulated list, as I have seen done at Newtownards show in the table of fruit class for the judges marks and remarks. It would be something for the visitors, as well as those showing, to "read, mark, learn, and inwardly digest." I wonder will the secretary of the Royal Horticultural Society see this and advise the prime mover of shows to advise all local shows to adopt this plan. We ought to progress every year and not keep running in the same groove. I am perfectly well aware that there are rules

in most show schedules about tent committees not allowing untidy exhibits to be staged, but I must admit that they do not do their duty. You will be told that you do not want to discourage a beginner by acting as above; quite right, but why not take the trouble to help that poor beginner, and show him how the thing should be done. He would, perhaps, thank you, and the *tout ensemble* of your show would look much better. After all, much depends on the exhibitor himself, but even he can be got at if you go the right way. I think the card business with the exposed points has much to recommend it to a universal trial all through our shows this year.

Nature-Poetry.

By PÁDRAIC COLUM.



IN the mountain to-day there is the beautiful light of the summer. The furze, against a background of recent burning, is fresh, brilliant, and profuse. The young kids are still beside their mothers, but they have become active and daring, and the old horses in the grass-lands have regained some spirit and bravery. The beauty of this month is so palpable that every generation has expressed delight in it, and it is so simple that the oldest are the truest expressions. As I cross the mountain to-day an Irish poem of the ninth century is in my mind. It was made by Fionn, the hero of a race older perhaps than the historic Gaelic race. In Fionn's day a hero had to show he was something of a poet before he was admitted into the military companionship of the Fianna, and certainly Fionn and many of his companions showed a poet's understanding of the large and simple nature amongst which they moved. Well, the young champion was asked to "prove his poetry," and, as became a youth in the youth of the world, he took for his subject the May day. Said Fionn :—

May day, season surpassing ! Splendid is colour then !
Blackbirds sing a full lay if there be a slender shaft
of day.

The dust-coloured cuckoo calls aloud welcome, splendid
summer : The bitter, bad weather is past, the
boughs of the wood are a thicket.

Summer cuts the river down, the swift herd of horses
seek the pool, the long hair of the heather is out-
spread the soft white, wild cotton blows.

The harp of the forest sounds music, the sail gathers—
perfect peace. Colour has settled on every height,
haze in the lake of full waters.

The cornerake, a strenuous bard, discourses, the lofty
virgin waterfall sings a welcome to the warm pool,
the talk of the rushes is come.

Man flourishes, the maiden buds in her strong pride.
Perfect each forest from top to ground. Perfect
each great stately plain.

A timorous, tiny, persistent little fellow sings at the
top of his voice, the lark sings clear tidings. Sur-
passing May of delicate colours.

Fionn remained a lover of the beautiful summer time. Once a lazy fellow in his service, wishing to numb human endeavour, stated in poetic stanzas that winter was in occupation of the land. Fionn contradicted him. Summer had come, and, as of old, the hero praised the season :—

The sun smiles over every land. A parting for me
from the brood of cares. Hounds bark, stags
tryst, ravens flourish, summer has come.

The light and colour of summer has been noticed by those old Irish poets. "When splendid summer time spreads her coloured mantle" is a phrase used in another of the nature poems.

In Standish Hayes O'Grady's "*Silva Gadelica*" many nature poems are quoted. One of the longest, enumerating the trees, informs us how each tree was regarded by our ancestors. Iubhdan saw his servant about to burn a twist of woodbine, and he recited the following poem as a counsel to the woodman :—

O man, that for Fergus of the feasts doth kindle
fire, whether afloat or ashore, never burn the King of the
Woods. Monarch of Innisfail's forests the woodbine is,
whom none may hold captive, no feeble sovereign's effort
it is to hug all tough trees in his embrace. . . .
Burn not the precious apple tree of spreading and
low sweeping bough, tree ever decked in bloom of
white, against whose fair head all man put forth the
hand. The surly blackthorn is a wanderer, and a wood
that the artificer burns not, throughout his body, though
it be scanty, birds in their flocks warble. The noble
willow tree burn not, a tree sacred to poems, within his
blooms bees are a-sucking, all love the little cage. . . .
Dark is the colour of the ash, timber that makes the
wheels to go, rods he furnishes for the horseman's
hands, and his form turns battle into flight. Teater-
hook amongst woods the spiteful briar is, by all means
burn him that is so keen and green, he cuts, he flays
the foot. . . . Holly, burn it green, holly, burn it dry;
of all trees whatsoever, the critically best is the holly.
. . . . Patriarch of the long-lasting woods is the yew,
sacred to feasts as is well known, of him now build ye
dark-red vats of goodly size.

I fancy it would take a whole number of this
journal to quote with any fulness the nature
poems embedded in the slow-moving prose of

"Silva Gadelica." I do not think these quotations would be irrelevant. IRISH GARDENING exists, not only to further the cultivation of beautiful nature, but to further the cultivation of our minds with regard to such beauty. And those who saw with love a piece of wild nature are at one with those who cultivate their garden with the seeing eye and the feeling heart. Caelte, the companion of Fionn, knew a well in some wild place and he broke into poetry when he told Saint Patrick of it:—

O! Well of Traigh Da bhean, beautiful thy cresses, luxurious-branching, are! Since thy produce is neglected on thee, thy *fothlecht* is not suffered to grow. Forth from thy banks thy trout are to be seen. . . . Lovely the colour of thy purling streams, O! thou [that thyself art] azure hued and again green with selections of surrounding copse-wood.

Whitethorns in a City Square.

THE aberrations of modern planting might afford the theme for a series of papers, but fault finding makes unpleasant reading. One might descant on the monotonous plantations of sombre, lumpy "evergreens"; on the hotch-potch shrubbery, where variegated aucubas jostle golden privet, laurestinus, and Berberis Darwinii with endless reiteration; or on the later fashion, which consists in getting together a menagerie of the vegetable world, and planting them in colonies of a dozen or more of a species, shoulder to shoulder, in unending and monotonous regularity like stalls at an international exhibition.

How different the effect of a more primitive school, as illustrated by the example of planting in Rutland Square, in the city of Dublin. Here one of our native trees, the whitethorn, is the principal ingredient. Interspersed are a few lilacs and laburnums, and here and there in the middle distance, as if for perspective, we have a stately ash or elm. These latter serve to break the outline and carry the eye to the more distant background—clouds and sky. Trees, shrubs, and sky are each only part of the picture, and yet so intimately so as to afford no suggestion of divorce or line of separation.

In early summer, when the whitethorns, which give the dominant note, are in the first flush of their new foliage, we have a picture of such brilliancy as would be difficult to surpass by any combination. Following quickly on this is the period of blossom, when the white

sprays of the thorn are contrasted with the lilac of the Syringa and the "golden chains" of the laburnum. In late summer and autumn, when the greens give place to browns, the picture is equally pleasing; and, as day by day they assume more russet tones, the poetry of the autumnal woods is realised by the dweller in the city, and more particularly in the evenings, when the western sky is flushed with red, he has a picture that recalls, yet far surpasses, the finest efforts of the greatest masters of the brush—early or modern; and in winter, when all the branches are bare, the eye of the townsman may follow with delight the rich tracery of their branch systems set in sharp relief against the ever-changing face of the heavens. Can the same be said of much of our present day planting, when simplicity and congruity give place to an intricate riot of aliens drawn from every clime and altitude under the sun?

W. B. B.

Advice to the Amateur.

THESE are a few cardinal points in gardening that ought to be remembered by the amateur:—

Grow no plant that does not personally appeal to you. Do not attempt to grow a lot of different kinds. Those you finally select upon, study closely their natural requirements, so that you can grow them well.

Treat the soil so that it will yield you its highest possibilities. See to drainage. Dig deep and cultivate thoroughly. Think in terms of cubic dimensions, and not merely in terms of superficial area.

Manure as well as you know how, and keep the hoe going all the summer through. If seedling weeds appear let the fact at once remind you of your neglect of duty. The hoe is more useful than the watering can.

Do not overcrowd your plants. When planting make the hole big enough to take the outspread root system. Water well, then make loose the surface with a hoe.

Use only the best seed and buy only the best plants.

In vegetable culture use intelligence in arranging rotation of crops.

In your flower garden refrain from making silly little beds and stupid walks, and in planting avoid dottiness; go in for bold clumps of individual species, as nature always does at her best.

Be individual in your gardening; let the garden express your own idea of beauty. Observe and learn from other folks' efforts by all means, but use your own brains.



"THE greatest joy which a garden can yield is a feeling of restfulness and peace, a feeling which no garden of starting beds and ostentatious splendour can afford, but which is yielded—as by nothing else in the world—by a garden of happy, homely, old-fashioned flowers."

Sarracenias. By R. M. POLLOCK.

THESE plants are what are sometimes known as the "side-saddle flower," probably from the long petals which hang between the curves of the curious umbrella-like pistil. They are, however, more often spoken of as "pitcher plants," which name they get from the pitcher-shaped leaves. In their native country of North America, the sarracenias are bog plants, but can be easily cultivated as pot plants. If potted in a compost of peat and sphagnum, kept cool during winter when growth is at rest, and given a little heat and moisture to start them in spring, the result should be satisfactory. These plants are usually grown for their brightly-coloured pitchers, which are really the leaves. The accompanying photo shows these leaves, which in many of the varieties are very beautiful. Two sets of pitchers are made during the growing period, one set while the plants are in flower, and a second set, which is the best and strongest, is made after flowering. These pitchers vary much in colour and shape, some are long and thin, others broad and shorter, some are red-veined with darker red, others light-green turning to white at the mouth of the pitcher, and this white portion veined with green, others have the white portion veined with red. The flowers are also remarkable, they stand above the pitchers, solitary, that is, one flower to a stalk, and nodding at the least touch. These flowers also vary considerably in colour, from bright red to dark red and pale yellow. Many garden hybrids have been raised which have improved the colour and size of the flowers as well as the size and substance of the pitchers. Among these hybrids may be mentioned Popei, Chelsoni, and Mooreana. There are also many named seedlings. The object of these

pitchers is to attract and catch insects. The insect innocently alights on the glossy, curved surface at the mouth of the pitcher, to which it is attracted by the honey glands there secreted. As it proceeds inwards and downwards the surface becomes more slippery, and reaching a portion covered with hairs, also leading it downwards, it soon falls into the base of the pitcher, where it quickly dies and its body decomposes. Owing to the downward pointing hairs and slippery surface it is impossible for any insect to return once it has started the journey. It should be noted that in these sarracenias it is the whole leaf that is transformed into the pitcher, while in *Nepenthes*, also known as "pitcher plants," it is only a portion of the leaf.



Photo by)

[C. F. J. J. J.]

SARRACENIA. (Photographed in Glasnevin).

General Notes

JUNE

JUNE is the great month for old-fashioned flowers—the flowers of sentiment as time and literature have made them—"gold-dusted snapdragon," "Sweet William with his homely cottage smell," "Woodbine hanging bonnie," "Foxglove cluster dappled bells," "Paeony, Lilac, Laburnum, and "fresh Hawthorne," each full of tender associations, and each very beautiful in itself. In June a spirit of indolence begins to come over the gardener who grows his flowers in the open air. All through the months of spring the garden contains, or should contain, numerous objects of beauty and numerous objects of interest, but not until June does the garden become swamped by a great sea of beauty, in the presence of which the modest gardener can but stand aside and gaze with wonder and enjoyment.—*Harry Roberts.*

AUBRIETIAS are some of the most useful of rock plants, and they are now making fine displays in many gardens. The plants are easily grown from seeds or from cuttings. Seed should be sown during this month and the seedlings pricked out about six weeks later. Planting into the permanent positions should take place from September onwards. Another method of propagation is by means of cuttings. The cuttings should be planted in a light sandy soil in a shady border, and, like the seedlings, planted in their permanent positions in the autumn. There are now a number of named varieties in a wide range of colour, and lasting in flower over a considerable period, and these should be propagated from cuttings taken now or by division of the plants in the autumn.

ROCK GARDENS.—We have received from the *Country Life*, Ltd., a copy of *Rock and Water Gardens*, by the late F. W. Meyer, which is sure to interest a large number of our readers. The cultivation of Alpines is getting more and more popular every year. One advantage of rock gardening is that it takes up comparatively little space and is particularly suited to owners of small gardens who pursue gardening as a hobby. We know of one small suburban garden, the whole space of which is planned out as a rock garden, and a more delightful and interesting garden could hardly be imagined. To any one anxious to know how best to build a rock garden, to plant it, and care for it, we cordially recommend this book. It is very fully illustrated.

RHUBARB DRINK.—A nice refreshing drink may be made by cutting up a few rhubarb stalks into small pieces, and boiling in a sufficient quantity of water for about ten minutes. The proportion of rhubarb to water may be four sticks to a quart. Strain, add the rind of a lemon, and sugar to taste.

THE DOUBLE-FLOWERED ARABIS, which has been particularly showy this spring, is an easily grown perennial which flourishes in dry spots. Cuttings taken during the summer and planted in a partially shaded border will readily root, and if small clumps of these are planted in the border in the autumn they will furnish masses of white flowers in the following spring.

If one may judge by the evidence of the Temple Show the Perpetual flowering carnation is fast gaining in popularity. Much interest was shown in a new variety named Corola, having the scent of the old clove pinks of cottage gardens.

A MOSSY or weedy lawn may be improved by scattering broadcast over it a mixture of ammoniated sand. The ammonia compound to use is the sulphate, and the strength 1 lb. for thirty-two square yards. This is to be thoroughly well mixed with sufficient sand, to give a good sprinkling for the area mentioned.

BERRIES FOR DECORATION.—The berries of mountain ash make a very effective decoration for rooms. They are, however, much appreciated by birds, which soon strip the tree of its abundance of brilliant fruit. They can be preserved, however, for a considerable time by cutting the fruiting branches, placing them in water, and keeping them in a cool place. Other fruiting sprays may be treated in the same way, such as Guelder rose, Bitter Sweet, species of *Berberis*, hawthorn, &c.

SUMMER TREATMENT OF MALMAISONS.—By the end of May Malmaison carnations can be stood outside for the summer on a hard bed of coal-ashes. There they should be grown on liberally and all flower-buds nipped off as they appear. By the end of summer young plants should be in 6-inch pots and 2-year old plants in 8-inch pots. The most useful book, perhaps, for your purpose is the "Carnation Manual," price 3s. 10d., post free, from H. G. Cove, 41 Wellington Street, Covent Garden.—*Answer to a Correspondent.*

AN INTERESTING CLIMBER.—The climber sent is *Clianthus puniceus* (the Parrot's Bill), a native of New Zealand. It is not generally hardy, but will stand the winter outside in the South of Ireland and the more favoured places. The Parrot's Bill can be planted out now, and usually flowers more freely when planted against a wall. The annual growth varies from two to four feet according to the soil in which the plant is grown. Cuttings taken with a heel, inserted in sand, and given bottom heat root freely.—*Answer to a Correspondent.*

SELF-STERILITY IN APPLES.—Fruit-growers should not forget that many varieties of apple-trees are sterile to their own pollen, and that fertilisation can only take place when pollen from a different variety is used for the purpose. According to Mr. Chittenden, out of twenty-three varieties tested only three were self-fertile. These were Gladstone, Stirling Castle, and King of the Pippins. The others were self-sterile, viz.:—Beauty of Kent, Bismarck, Bramley's Seedling, Cellini Pippin, Claygate Pearmain, Cox's Orange Pippin, Ecklinville Seedling, Lane's Prince Albert, Lady Sudley, Mannington Pearmain, Newton Wonder, Northern Greening, Peasgood Nonsuch, Royal Jubilee, Sandringham, Sturmer Pippin, Wellington, Worcester Pearmain. It is important to know such facts with respect to all our varieties of apples. It is also important to know the relative dates of flowering of the trees. In the light of such facts as above a pure plantation of Cox's, for example, would be less likely to bear well than if a few other varieties, blossoming at the same time, were intermixed in order to supply the necessary amount of fertile pollen.

Tulips

The garden is now gay with the gorgeous flowers of the ever attractive tulip. What beauty of form and variety in colour is presented by these tall stalked May-flowering varieties! How surpassingly more beautiful the "selfs" are than the striped or feathered fancies of the florist form of flower! They are easily grown, but, as has been well said by one who loves them, the "tulip is a queenly flower, and asketh a rich soil and the hand of a lover." The tulip was introduced into this country towards the end of the sixteenth century, and since then has always been a favourite garden decoration. There are broadly two classes—the short-stalked early-flowering and the long-stalked May-flowering forms. It is difficult to say how many varieties there are now, but there are a great many. Even in the seventeenth century Parkinson describes as many as a hundred and fifty different kinds. Lovers of the tulip owe much to that veteran enthusiast, our own Mr. William Baylor Hartland, whose services in connection with the delightful May-flowering varieties deserve the warmest gratitude of all sincere admirers of these graceful plants.

The parents of most of the present varieties of May-flowering tulips were collected by Mr. Hartland from old cottage gardens throughout Ireland, and by Messrs. Barr from similar sources in Great Britain, hence the term "Cottage" tulip applied to the class. When planted in masses of one sort, they give grand effects. Variety and richness of colour are distinctive features in these tulips—rosy white, rose, rose suffused with salmon, heliotrope flushed with rose orange, orange yellow, golden yellow, scarlet and purple. In addition to colour, the tall strong stems rising from broad grey-toned foliage, and ending in graceful cup-shaped flowers, give a distinctive beauty to these charming plants. The following are the names of a few varieties:—Brilliant, Bronze King, Carnation, Corona lutea, Dainty Maid, Elegans, Fairy Queen, Fulgens, The Fawn, Golden Goblet, Lucifer, &c.

Mulching

"MULCH" is a gardening term for a surface-soil covering, its object being either to conserve the moisture in the soil by preventing evaporation or to afford a small continuous supply of soluble plant food. If only the first object is in view, straw, lawn mowings, or even powdery soil will answer the purpose, but if the second function is aimed at then half-rotten or well-rotted

manure of a strawy nature may be used. But care must be taken that it is not of a too moist or sticky nature, else it will seal the pores of the soil by preventing proper soil aeration, and thus work harm instead of good to the living roots of the plant. Mulching may now be commenced. If done too early in the season it would tend to delay the natural warming of the soil, and so retard growth. The subjects that benefit most, perhaps, from mulching are recently planted trees and shrubs and transplanted herbaceous plants. It is well known, too, that roses, sweet peas, asparagus, rhubarb, raspberry, loganberry, and numerous other plants benefit greatly by the application of a feeding mulch. Pot plants are frequently mulched with a mixture of sifted loam and chemical manures. For beds and borders frequent and careful

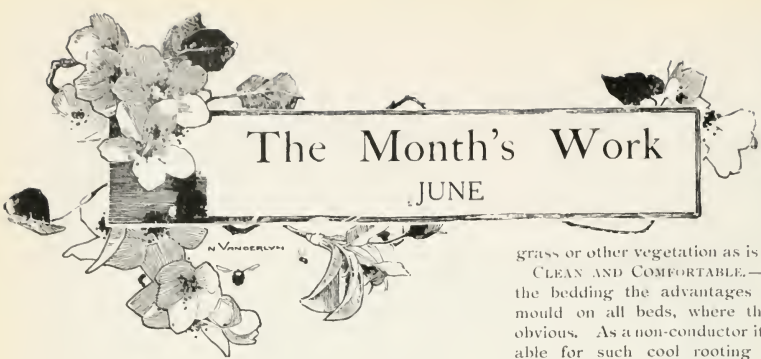


TULIP "THE FAWN"

One of Mr. Hartland's May-flowering (or Cottage) tulips, a varietal form of *T. gesneriana*. Colour—a white ground shaded with pink and yellow. Photographed in the Botanic Gardens, Glasnevin.

hoeings, by which the surface soil is kept loose and powdery, will afford the necessary conservation of moisture mulch, and will give results most gratifying to the cultivator.

During a dry summer, mulching has a wonderful effect upon trees. In a natural state the soil over the feeding roots of trees receive an annual mulch each autumn by the falling leaves, and this suggests a like or equivalent treatment when planted in gardens or pleasure grounds. In mulching trees it must be kept in mind that the material should be spread as wide as the branches extend, as the vast majority of the feeding roots are at the tips of the outlying root-branches. Recently planted trees especially benefit from being kept mulched during the summer, as they are very liable to suffer through lack of sufficient moisture.



The Month's Work

JUNE

Flower Garden and Pleasure Grounds.

By E. KNOWLTON, F.R.H.S.

HIGH PRAISE.—Apropos of King Edward's taste for gardening, and it was evinced in various directions, the *Journal of Horticulture* recently told us "his influence was directly exerted in the bedding around Buckingham Palace, where a glorious blaze of the scarlet Paul Crampel geranium was what he liked." It is high meed of praise for Paul Crampel, but no more than Paul deserves, and although we have no wish to see the flower garden overflowing into the pleasure grounds there is more than one well kept place, with its closely shorn greensward and undulating background of shrubs, where we should like to pop down a patch of Paul Crampel to brighten things up a bit, and this is pretty well all we have to say about bedding pure and simple, for no one in the throes of it wants to be bothered with suggestions as far as the plans for the formal garden are concerned, which, in most places, is now in a state of eruption. We have before pleaded for an informal group of the brilliantly-flowered and beautiful-foliaged cannas in a similar position—viz., some sheltered nook in the pleasure grounds, and merely mention it as a reminder.

GARDEN ACCESSORIES.—"Oh! for a seat in some poetic nook," sang Leigh Hunt. Perhaps, poor man, less thought was given to the matter in his day, nooks and poets being plentiful, whilst seats were scarce. Anyway, garden furniture now plays a prominent part in gardening; and as far as the flower garden is concerned, at the completion of the bedding we like to have all the garden seats in their places with a fresh coat of paint or varnish, as the case may be, to make them clean and bright for the season. We have, in fact, always regarded this detail as part of the work, and the annual refresher as merely the work of a handyman. In a good example of the Italian garden, where cut stone is a prominent feature, we question any colour but white for the garden furniture. The stone work is another item not to be disregarded, and at the finish of planting operations need not be grudging a wash down. In cases where the stone, however employed, as steps, or otherwise, has the tendency to become

green, we have found the simplest and best thing for removing any green growth engendered by our moist climate to be one of the weed killers, a rather strong solution being used in a scrub down, care being taken to avoid wetting such

grass or other vegetation as is in contiguity.

CLEAN AND COMFORTABLE.—With the completion of the bedding the advantages of a mulching of bog-mould on all beds, where this is easy to obtain, is obvious. As a non-conductor it is especially commendable for such cool rooting subjects as the viola, calceolaria, and tuberous begonia, and gives a neatness and finish to the whole of the bedding. We have generally been able to obtain bog-mould, as the small residue of the peat-moss is termed, at practically the cost of carriage. Amongst the gayest of dwarf things for edging or groundwork are violas, but unfortunately it is not easy to keep them from misbehaving by dying away in patches just at the height of the season when most wanted. A good deal of this, however, is contingent on the method of propagation, and plants raised from cuttings inserted not earlier than the middle of October can generally be coaxed by a little manipulation to do their duty the season through. Such we have found the case where a moist, rich root-hold of manure and leaf-mould has been provided, and an occasional soaking during dry spells is not overlooked; removal of the fading flowers to prevent seed pods forming being also insisted on. Dwarf nasturtiums in distinct colours are helpful to the man with many beds if poor, firm soil has been given. In such cases they will form a floriferous mass, requiring but little attention beyond the insertion of a few short twigs about the plants, as supports in their wrestling with wind, without which they are apt to be toppled over, and possibly bowled across the garden. Where dwarf nasturtiums are inclined to leafage in the first flush of their youthful vigour, it is of advantage to pinch out half the foliage as a reminder of what they are there for.

IN TIMES OF TROUBLE.—That men generally, and gardeners in particular, are born to trouble is generally endorsed before the "blessed" bedding is over. It may be that the beds are of that size and situation, that the blanks made by the failure of even one plant become an eyesore. It has been our practice to endeavour to meet this by potting up a few of the weaker surplus and keeping them in a sheltered corner for the emergency. Even scraps of violas, calceolarias, and similar things, if potted in compost of half-decayed manure, soon make themselves in this position, and can be transferred at any time. Above and beyond this we have always been addicted to the shameful practice of relegating any spare bedders to the hardy flower border, where, especially towards autumn, one enjoys a sniff of heliotrope, or a bit of brightness in scarlet or yellow. And how often, too, have we found before our orthodox bedding has been completed a shortage whereby some of the smaller beds of less consequence, perhaps, have

yet to be filled when the stock is depleted! Could one use up the odds and ends, that of course would be different, but only patchwork on the larger scale being admissible, such is not to be thought of. In our dire extremity have we resorted to such things as mignonne. Mere madness one might say to sow beds at mid-June. However, as far as madness is concerned, summer bedding time is the gardeners' dog days, and it may be a round bed, or a square bed, or any of those delightful designs the garden artist has inflicted on us, or half-a-dozen of them perhaps which have to be filled, and to make things sure they were surfaced with six inches fresh yellow loam on which the seeds were thinly sown, and—well there was not much show for a bit, but the beds were tolerated, and later on it was quite another story. By the way, we never get such mignonne as that sown in fresh loam, and too often ordinary soil and early sowing is but vanity and vexation of the spirit, and we have now come to regard the giant varieties of the esteemed old-fashioned flower as indispensable to the summer flower garden. The same method can be employed with dwarf nasturtiums merely treading the ordinary soil tight, as tight as possible, and dibbling in the seeds six inches apart; all make-shifts, of course, but well able to speak up for themselves later.

FAIR BUT FICKLE.—How difficult it is near the seaboard to get the tuberous begonia into that cheerful luxuriance it displays without trouble in the more humid atmosphere of inland districts! We should not, of course, ever think of doing less for the tuberous one, where an effective bed is wanted, than that of giving it a compost of well-decayed manure, rough leaf-mould, and sand, with a coverlet of bog-mould to finish up with. Under such conditions it is easy to keep an equably moist rooting medium, with an occasional watering during dry spells, watering only towards evening, otherwise foliage scalding will probably result. We know some friends inland who, having beds of the tuberous beauties in perfection without trouble, will smile at our precautions, but they would smile both bigger and broader if they knew how much we watered and wept and prayed over half-a-dozen beds at the entrance to the Irish International Exhibition but three short years ago for fear they would disgrace us. But that, too, is another story.

The Fruit Grounds.

By A. BARKER, Carrigoran, Newmarket-on-Fergus, Co. Clare.

BY the time that my notes are before the readers of IRISH GARDENING all fruit-growers will have had an opportunity of forming a pretty accurate estimation of the crops of fruit for the coming season. I am very much afraid that the wonted tours of inspection of trees and plots will have very frequently brought keen feelings of disappointment, as the weather during most of May has been of a very unfavourable kind for the proper development of fruit crops. However, if happily the stormy sunless days of May are over there is still every hope for a plentiful apple crop, as there is

such an abundance of apple blossoms. Rarely have I seen trees so loaded with blossoms in two successive seasons.

Lose no time now in setting strawberry plots in order for the ripening fruit as advised in previous calendar; do not err in placing too much straw or litter under the fruit, as this is a decided advantage in a dull, wet season, by keeping the ground too cold and wet under the fruit (besides being wasteful). Give the plots a thorough clearing of weeds, and there will be the less trouble with them when the fruit is ripe. Get preparations well ahead for netting the plots; it is always an advantage to raise the nets well above the plants, and to such a height as will enable picking to be done without removing the nets is much the best. Drive down a row of stakes round the plots three or four paces apart, leaving them four or five feet above ground; also rows at intervals through the beds. Run a strong tarred string from post to post, giving it a loop round the top of stakes to carry the nets. Galvanised wire makes a very good carrying material, as it is not affected with weather, and keeps the netting steadier in showery weather. By looping the string or wire round the tops of posts it is readily taken down, and can be used again for other purposes. A similar arrangement of netting is also very satisfactory where quantities of bush fruits are left hanging to ripen.

Gooseberries are now rapidly approaching maturity, and where required for bottling or for jam should be gathered when about half grown. As soon as gooseberry trees are cleared of their crops cut away any branches too near the ground and any superabundant shoots in centre of bushes (this thinning or summer pruning is very beneficial to the bushes), and if caterpillars are present spray with Swift's arsenate of lead, 1 lb. to 50 gals. of water. A heavy dusting of air-slaked lime and soot in about equal proportions is a useful remedy against caterpillars. But if the trees are badly affected, very old or exhausted, dig them up and consign to fire-heap, and start anew with young clean trees on fresh ground next autumn. As American gooseberry mildew is such a virulent and destructive pest prompt remedies must be adopted wherever it may appear. The Board of Agriculture recommend spraying with liver of sulphur, 1 lb. to 32 gals. of water. My remedy (unless in case of a number of young strong trees) would be to carefully cut away the trees and burn them. The cost of doctoring bush fruit trees might soon exceed that of replacing them with healthy young trees.

Disbudding, training, and pinching of wall and other fruit trees will need attention this month. Where outdoor peaches are grown, remove all shoots excepting one or two of best and most favourably placed at, or near, base of last year's shoots which are now carrying the fruits, and keep them periodically nailed or tied in to furnish fruiting wood for next year; pinch the points out of all leading shoots as soon as the fruits are swelling freely (unless such as may be required for extending the trees). If the trees have set heavy crops the fruits may be thinned more or less according to the size of fruits required. Unless small or medium-size fruits are required for preserving, the fruits should be thinned to from six to twelve inches apart. A further disbudding of shoots may be made after it is quite evident that clean,

healthy shoots are growing away, by removing all shoots but best one at base of last year's shoot. Outdoor figs may be treated in a similar manner, except that there is not usually any necessity to thin the fruits. Towards the end of the month nail down the leading shoots on trees that have not already filled their allotted space, and pinch or clip away all the new shoots down to five or six leaves, and where the young shoots are too thick cut a number of them completely away. Go through cordons, espalier-trained and young bush or pyramid trees, and pinch or prune the side growths; also cut out any ill-placed, superabundant or weakly growths completely; allow the leading shoots to extend freely for some time. Older, fully grown, and orchard trees may be left until later on in summer. This summer pruning is especially beneficial in case of trees that have not set good crops of fruit, and during summer it may be much more readily seen where there is overcrowding or superabundant growth. Whenever going over fruit trees have no hesitation in removing curled-up leaves or points of shoots where the edges of leaves appear drawn together and gummed up, for assuredly some insect pest or other is lurking in such places, carefully perpetuating their kind. Give all attention possible to general work, such as mulching, watering, and keeping down weeds; this advice has been more reiterated than almost any other operations possible. "Keep the hoe going" is a phrase almost as old as "the hills," but the great benefit resulting from close attention to this operation under fruit trees is too frequently disregarded or unappreciated. Mulching and watering ought to be a comparatively pleasant operation to these well-equipped with such adjuncts as a plentiful supply of water, hose pipes, manure, &c. But wherever fruit trees are carrying heavy crops the above is a most beneficial operation, in case of a spell of hot, dry weather setting in, and the greater the efforts in this direction the greater will be the satisfaction at results when fruit is matured.

The Vegetable Garden.

By WILLIAM TYNDALL, Horticultural Instructor, Co. Kildare.

MOST of the seeds of vegetables will now be sown, but successional sowings of French beans, spinach, turnips, and lettuce will require to be made every two weeks, selecting a cool border for spinach, turnips, and lettuce, so that they may remain for a longer season fit for use and not get stringy or run to seed. A last sowing of peas, the Gladstone and Autocrat, should be made the first week of this month in ground deeply dug and heavily manured. Peas from this sowing should be pulled until well into October. Towards the end of the month make a sowing of an early variety of pea, such as Gradus or Bountiful, for use about the end of September. A sowing of scarlet runner beans may also be made about the middle of the month to give a late supply, as the early sowing, unless it gets very good cultivation and plenty of feeding, often goes over before frost cuts them down. A last sowing of Broad Windsor bean should be made at once to give a late supply. Plant out Brussels sprouts, cauliflower, savoy, and early broccoli as the plants become fit and ground

vacant. Before planting the soil should be deeply dug or trenched and well manured, as all the members of the Brassica family dearly love manure. If the weather is dry one good watering after planting is generally sufficient to give the plants a good start if they are strong and sturdy when planting. Towards the end of the month plant out the winter and spring broccoli on firm and not over rich ground, as they are then much hardier and not so liable to be killed by severe weather. This past winter has been one of the worse I can remember on broccoli in this country, the plants being killed wholesale, few being left in most places.

The growing crops should now, with the warm weather we are having, be making rapid progress. Thin all crops as they advance, stake such crops as require them, and keep the hoe going constantly. Slugs, if the weather is warm and damp, cause much destruction to plants, and probably the most effectual way of getting rid of them is gathering by hand every morning, and if heaps of wet bran or grains about the size of your hand are laid through the growing crops many can be caught quickly.

CELERY.—Get your main crop of celery planted as early in the month as the plants are strong enough to go out. Plant in trenches fourteen inches wide and twelve inches deep, putting eight or nine inches of well-decayed manure on bottom and a couple of inches of soil on top of manure, making all firm; plant about ten inches apart. If a double line of plants is to be grown make the trench eighteen inches wide and plant zig-zag. Never let celery suffer from drought, but give plenty of clear water till plants are growing freely, and then liquid manure.

TOMATO.—Plants raised under glass for growing in the open should now be planted without delay, as many of them will have some fruits set; if carefully hardened off and planted against south walls good crops of fruit should be got. Keep the plants to single cordons, as these give the earliest and finest fruit.

Considering that last year was so unfavourable for the harvesting of seeds they have germinated this season much better than might have been expected, and where failures have occurred it has generally been due to insect pests, sowing too early the past cold wet spring, &c. Never have I seen parsley come up so quickly as in our experimental garden here. Sown the same time as onions and parsnips it germinated sooner than these crops. For winter use a sowing of parsley seed may now be made.



Salad Plants.

In order to keep up a good supply of these frequent sowings are very necessary. The most popular kinds are, perhaps, lettuce, radish, and mustard and cress. Endive is also very useful. Salads ought to be quickly grown, and in hot, dry weather close attention should be given to watering, as everything depends upon producing well-nourished, succulent, and therefore crisp tissues. Radishes thrive best in a cold, moist soil. As endive is a winter salad it may not be sown until July.

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Irish Gardening

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IRISH GARDENING

VOLUME V.
No. 53

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

JULY
1910

Herbaceous Calceolarias

By J. H. CUMMING, Overseer, Royal Dublin Society, Balls Bridge.



T'S a dirty thing for greenfly." Such is the charge generally brought against the calceolaria by unsuccessful growers. Now, it must frankly be admitted that greenfly are somewhat partial to calceolarias grown under certain conditions, but by fulfilling a few simple require-

ments the plant can be so grown that the aphides will give very little trouble. I am aware that in these days there is a great demand for cut flowers, both from out-door and in-door subjects, and I quite agree that for furnishing cut flowers the calceolaria is useless, but the same applies to many other flowering plants that are deservedly popular, notwithstanding this slight drawback.

A well grown batch of herbaceous calceolarias always commands attention and admiration and not a little envy from gardeners, and they are not cultivated so extensively as their merits deserve. This in a great measure is due to a fallacy—viz., that there is some special difficulty about the cultivation of the plant, whereas its cultivation is of the easiest description. It is a subject that can be grown at a minimum of cost, requiring very little artificial heat, and succeeding best in structures of the most unpretentious kind. In this connection let me say that most of the failures that occur in calceolaria culture are due to coddling; in other words, when the calceolaria is killed it is almost invariably by kindness. Our present-day superb strains are the result of hybridisation between such old-named varieties as *amplexicaulis*, *interfolia*, *purpurea*, *corymbosa*, and a few others. There are comparatively few really poor strains of seed in the market to-day, but

some are undoubtedly superior to others, and caution in the purchase of seed is advised.

In comparing strains two points ought to be kept in view. The first and primary one is the size and quality of the flowers. The second is the habit of the plants. Tom Thumb strains and those with a leggy habit should be avoided, a medium height with a compact habit being the thing to be desiderated. Another point worth noting is that plants which naturally produce ample foliage of a thick, succulent character are more vigorous and healthy than those with thin, spare foliage; moreover, a groundwork of massive green foliage helps to relieve the bright colour of the flowers.

Now, as to details of cultivation. The end of June or early in July is a good time to sow for the production of plants for general decorative purposes. Sow in pans thoroughly clean and well drained. Equal parts of fibrous loam and leaf-mould, with a good dash of sharp sand, form a good mixture for sowing the seed in. Pass the material through a half-inch sieve, and place the rough portion over the drainage, and the fine portion on the top of this. A small quantity of the compost should be passed through a still finer sieve to finish off the pans. Finish with as smooth a surface as possible. Water through a fine rose, and allow the soil to settle for an hour or so before sowing. Sow thinly, and just give a dusting with the finishing soil. Cover the pans with a pane of glass, and if clear glass shade will be necessary. A frame on a spent hotbed is an ideal spot for placing the pans in, and in fact for growing the plants in until late autumn, but any cold frame will answer the purpose quite as well.

As soon as germination takes place, air and

light must be gradually admitted, but with great care, and plants should never be subjected to strong sunshine. Watering must be carefully attended to throughout the whole period of cultivation; for whilst the soil should never be soured by over watering, yet the plants should never be allowed to suffer for want of water. Once allow them to flag, and the damage caused, although not necessarily fatal, will yet be irreparable.

When the seedlings have formed their first pair of rough leaves they should be pricked off. For this purpose I again prefer pans to boxes, as the soil can be kept sweeter in earthenware than in boxes. Equal parts of turfy loam and old hotbed manure passed through a half-inch sieve, the rough part being placed over the drainage, forms a highly suitable compost for the plants at this stage. They should be pricked off at about two inches apart, and after the operation is finished they should be returned to the frame and receive a moderate watering, keeping the frame well shaded and rather close for a few days. The young plants often come on somewhat irregularly, and when this is the case the stronger ones should be potted off first. For the first potting three-inch pots should be used, and the soil used should be the same as for pricking off in, only it should now be passed through a sieve with three-quarter inch mesh. Pot loosely to encourage root action. When placing the pots back in the frame they should be stood on a layer of ashes or sand. By this means the roots are kept cool, a point of great importance with the *calceolaria*. After the plants have taken to their pots plenty of air should be admitted both by day and night.

Some growers house the plants early in October, but if provision can be made against frost keep them out till well into November. A shift into five-inch pots will now be necessary, and a good time to perform the operation is at the time of housing. If there are the least signs of aphides the plants should be lightly vaporised before being removed from the frame, but if attention has been given to watering, airing and shading, this will seldom be found necessary. A somewhat richer soil should be used now and also for the final potting. The following is an excellent compost:—Two parts fibrous loam, one part half-decayed beech or oak leaves, and one part rotten cow manure, one-sixth of the whole of sand with a dash of soot and bone

meal. *Calceolarias* may be successfully wintered in various kinds of structures, provided a low temperature can be maintained throughout and the plants kept near the glass. A cool pit or low span-roofed house is the best place for them, but those who do not have the command of such structures may winter them quite successfully on shelves in a cool greenhouse. The important thing is to maintain a low temperature. Throughout the winter months a night temperature ranging from 40 degrees to 45 degrees will suit them admirably, and with hard frost the thermometer may drop to 36 degrees to avoid heavy firing. A portion of the plants will be ready for the final potting early in February, and the whole batch by the end of the month. Some of the more vigorous plants may be allowed eight-inch pots with advantage, but pots seven inch in diameter are quite large enough for general purposes. Still keep growing them in a cool place. After the plants have fairly taken to their new pots they will require liberal supplies of water, and when getting pot-bound an application of weak liquid manure twice a week will prove beneficial. *Calceolarias* do not care much for chemicals, and if it can be had, liquid manure made from cow-dung or horse-droppings will be found to suit them well. As already indicated, abundance of air must be admitted on all favourable occasions, and as the weather gets warmer special attention will have to be given to this matter and a sharp look out kept for greenfly, which is almost sure to put in an appearance as the solar heat increases. As soon as the enemy appears the vaporiser should be called into requisition, and in any case these operations should be performed before the plants come into flower.

As the season advances the plants should be shaded during bright weather; this prolongs the flowering period. As the flower stems come up staking must be attended to, and the stakes should be of a slender description, wire preferable, as they can be easily obtained.

When the plants are transferred to the conservatory they will prove more effectual arranged in masses than if arranged promiscuously. A group of well grown *calceolarias* of a good strain when in flower compel admiration alike from the fastidious and the apathetic spectator, whilst from the enthusiast they call forth unbounded praise.



Photo by]

PRIMULA MARGINATA LINDA POPE

[C. F. Ball

Current Topics.

By C. F. BALL, Royal Botanic Gardens, Glasnevin.

THE twenty-third annual Temple Show of the Royal Horticultural Society of England was held on May 24th, 25th and 26th. It is well known as the best show in Britain for flowers. Orchids as usual were a strong feature, no less than 14 getting awards or certificates. Monsieur Ch. Vuylsteke had a new *Odontodia* which was priced at £1,200. The best new rose was a *Wichuriana* form called "Excelsa," approaching scarlet in colour.

Two Irish firms staged good exhibits as usual. Messrs. Hogg & Robertson had a remarkably good lot of May flowering tulips flanked on either side with *ixias* and Spanish irises. Messrs. Alex. Dickson received an award of merit for the new rose, *Duchess of Westminster*. This firm also had a choice collection of tulips.

Messrs. Carter's Japanese garden was a novel feature for the show. It was beautifully designed, having taken several men a whole week to build. A sinuous lake in the centre contained gold fish and two trout a foot long. Over the lake was a bridge, and stone lanterns with a pagoda added to the effect. A draw-well with moss-covered opening and a pulley under a thatched umbrella-like roof were to be seen. The trees were in keeping with the scene, such as maples, *thuyas*, and bamboos.

Two new Alpine plants were exhibited at the Temple Show—*Androsace Henryi*, with white flowers, found by E. H. Wilson in China, shown by Messrs. Veitch, and a Composite shown by Mr. W. Marshall, Chairman of the Floral Committee. This is to be named *Aster Falconeri*.

Messrs. Perry showed a bank of *Lithospermum prostratum* Heavenly Blue. This plant differs from the

type only in colour, but when the two forms are placed side by side the type form looks comparatively dull.

The rock gardens this year have been very backward, but now there is a very good show of flowers. The *aubrietias* always make a great show, and one is often asked which are the best varieties. Dr. Mules is still the best deep purple *aubrietia*, and so free in flowering that sometimes the foliage is almost hidden by the mass of flowers. The newer *Aubrietia Pritchardsii* has a larger flower, but the colour is not quite so deep. *A. cilicica* has flowers of a soft shade, while if dwarfier and neater growers are required *A. Wallacei* and *Purple Robe* should be given a trial. *A. Moerheimi* and *Bridesmaid* have flowers of a beautiful soft shade of pink, while *A. Leitchii* is a deeper colour. Fire King has flowers of brightest fiery

red, but it is inclined to make a ragged plant, so it is better cut back after flowering, then the young growths which follow can be put in as cuttings to get a few good young plants.

The red mossy saxifrages have come into great favour recently, and as a natural consequence many worthless forms have been put on the market. The two best are *S. decipiens hybrida grandiflora*, also known as *Gloria*, and *Bathoniensis*; then come *Clibranii*, *Fergusoni*, *Guilford seedling* and *Rhei superba*. If seed is saved of some of the above and sown one gets whites, pinks, and reds, and one can select forms which are quite as good as some which have been named.

The photo shows *Primula marginata* Linda Pope. This plant, sent out by Messrs. Backhouse, of York, is one of the most beautiful of primulas; to my mind far more worthy of praise than the *Primula H. Wilsoni*, which has been much boomed. Linda Pope agrees with *P. marginata* in the beautiful edging of the leaf, but the leaf is broader and stronger and the flower is finer. An identical plant was shown at the Dublin show under the name of *Primula Mrs. Hall Walker*.

In *The Times* appeared an interesting letter from Lord Walsingham, in which he draws attention to the Plane tree. The letter reads as follows:—"So long ago as 1892 my attention was attracted to the condition of the road dust in the avenue of the planes to the west of Cannes, and I attributed a serious attack of pneumonia following severe bronchial and catarrhal irritation in a member of my family to this cause. The microscope applied to the dust, which was flying in clouds on a high wind, showed a plentiful admixture of minute specules formed by the breaking up of the fruit balls of Plane trees, and since that time innumerable instances have occurred in various places to confirm the impression then formed; indeed, it may be stated broadly that wherever Plane trees are abundant, colds, coughs, inflamed eyelids, throat trouble and general



Photo by]

[Hely & Co.

VIEW IN THE JAPANESE GARDEN, TULLY NURSERIES, KILDARE

irritation of the mucous membrane; are more prevalent than where such trees do not exist."

The third annual report of the Forestry Committee at Cambridge marks progress. For the past year Dr. Henry has given a series of lectures and conducted excursions to woods and plantations in the neighbourhood of Cambridge. Last year Dr. Henry made an experimental sowing of different kinds of elms. The resulting seedlings are interesting, showing that some trees that were supposed to be varieties of one species are in reality a combination of two species, in which Mendelian ratios are observed. This has drawn attention to the great vigour of certain first crosses of trees which have arisen in the wild state. For instance, the "Cricket Bat" willow, which is one of the most valuable willows we have, Dr. Henry has come to the conclusion that this is a cross between *Salix alba* and *S. fragilis*. This year an attempt is being made to raise new forest trees. *Eucommia ulmoides* is known as the hardy rubber tree, and was found in the mountains in central China. A small plot has been established near Norwich for experimental purposes. The bark produces 5 per cent. of rubber, the quality of which, however, is still a matter of doubt, as only minute quantities have been tested. At Glasnevin the *Eucommia* makes fair growth; it is a deciduous tree with a leaf similar to a large elm leaf. If the twigs or leaves are broken and pulled gently apart one sees small

strands or rubber joining the separated parts. The rubber does not flow out of the stem in the form of a milky latex as in the case of the para and other rubber trees after an incision is made in the bark.

Japanese Gardens.

JAPANESE gardens appear to be attracting a good deal of public attention at the present time. They seem to have caught the popular fancy in England, at least in southern England, and the recent establishment of one designed in an elaborate scale at the Tully Nurseries, Kildare, has given rise to a considerable amount of interest in Japanese methods of gardening in this country. On a day last month and in glorious weather a large party of gardeners (forty or thereabouts in number) belonging to the Irish Gardeners' Association paid a visit to these nurseries in order to see a typical Japanese garden designed by and carried out under the direct superintendence of a Japanese gardener specially engaged to carry out the work. We may, therefore, consider it to be a true representation of the style of gardening peculiar to the "flowery land" of the far East. That the visitors were interested goes without saying, but whether they all really appreciated or even understood the underlying idea of its conception and execution is, perhaps, doubtful. For the ideas and

methods of the oriental in gardening, as in most other things, are so very different from our own that before we can rightly understand we must first of all get to know the point of view of the people for whose pleasure and delight the gardens are made. A Japanese gardener is essentially an artist, and he approaches his work in the true spirit of the artist. The garden is to be a miniature landscape, not necessarily a copy of any existing landscape, but one fashioned according to the conception of the creative genius of the workman. Like Watt's masterpieces on canvas, the garden must be symbolic, suggestive and beautiful, and every part of it, even to the minutest detail, must be in harmony and full of meaning to the user of the garden. And just as Japanese pictures of plants and flowers are essentially different from pictures of the same subjects drawn by western artists, so is the Japanese garden of delight different from the European garden of pleasure. The Japanese artist first studies nature deeply and minutely, and then, being familiar with the essentials, draws his plans from memory, and working upon its broad outstanding and characteristic features neglects the unessential details and produces an effect at once simple, truthful and charming.

In its broader aspects the garden is formed of hills and valleys, with islands, lakes and streams often with falling water in the form of cascades. There is a central hill commanding the whole garden, and so

designed as to give the suggestion of much space, and carrying a resting place on its summit. The other hills are placed in definite relation to this central one, and from its summit a comprehensive view may be had of the whole garden. The rock work of the garden is designed with great care and nicety. There is first of all a central stone, massive in size, occupying the best position. If there is a cascade it is placed beside it with another rock smaller in size on the opposite side leaning towards it across the water, then in different spots are placed other stones bearing some relation as to position and shape to the central stone of the garden. These stones have each a special use or significance, such as a stone for worship, a hollow stone for the washing of hands, a stone for the support of a lantern, stones for fish to find shelter under, stepping stones, stones for seats, a stone of the solitary hill, or a stone of the quiet waters. The furnishing of the garden with trees and other plants is also conducted on purely architectural lines. As in the case of the hills and stones, so with the trees. There is one master tree dominating the whole scene. This is, as a rule, placed somewhere in line between the chief hill and the central stone, and may either be a tall pine or broad-leaved tree, preferably we believe an oak. And this large tree, usually a pine, selected for its special beauty, is planted in the middle of the garden, on an island by choice, so as to add dignity and attractiveness to the miniature landscape.



Photo by]

ANOTHER VIEW IN THE JAPANESE GARDEN, TULLY NURSERIES

[Hely & Co.

Then another tree is planted in a secluded corner to give shade, and under this is placed a seat for quiet rest or meditation. Beside the central stone, and overhanging the rushing waters, is planted a relatively large and fantastic pine, with a smaller companion on the opposite side. On one of the lesser hills on the outskirts of the garden a tree of beautiful blossom, such as a cherry or one of brilliant foliage, is planted, while on the rocky slopes on the islands and on margins of the lakes, or promontories running into the lakes are planted dwarf trees, mostly pines and other *Coniferae*, in confusing order, intermixed with rock plants and dwarf shrubs creeping down to the water-edge and passing into clump of iris and other moisture-loving plants which in turn tail off into the true aquatics, among which glide shoals of gold-fish, their burnished scales reflecting the light most gloriously as they pass and repass in their aimless quests. It is all so very different from our western notions of what a garden ought to be, that it is difficult to say whether one really likes it or not. The idea is good, but the method of carrying it out is the exact opposite to our own. With us the central idea is the plant, and our aim to get as near nature as we can under the artificial restrictions of a garden. Here there is no attempt at being natural, no consideration as to choice of plant and its adaptability to site and soil. We plant a garden, the Japanese build it. We aim at being natural, the Japanese is frankly artificial.

They use the plants in the construction exactly as they use stones. Just as they hew a stone into the size and shape required, so they clip, prune, twist, bend or otherwise dwarf or mis-shape the tree from its natural growth until they, with great skill and cunning, contrive to get it into conformity with their garden scheme. It is very ingenious as a style of architecture, but elaboratory primitive in execution as a system of gardening. But this feeling arises, no doubt, from the difference in points of view with which the east and west approaches the task of garden-making.

Now, to turn our attention to the interesting spot we set out to see and describe. The special symbolic meaning intended to be conveyed by the artist of the newly constructed Japanese garden at Tully was to produce a representation of the life of man from the cradle to the grave. Entering the beautiful, yet simple, gateway one is met with bright masses of plants clad with fresh pure foliage to denote birth and all the promise of healthy luxuriant life. Childhood is a winding path made mysteriously beautiful with shade and flower, and leading to the school hollowed out in one of the hills beyond which is the playground with space and facilities for the fun and frolic of early youth; but this is soon passed as we almost suddenly stumble into difficulties in the shape of hindering stones, dark archways, and treacherous swamps, until with a hard climb we reach the dry firm ground of the period of life when, after having successfully overcome all difficulties, man enters upon the more placid times of middle life and business or professional success. It is only, however, easy-going in a comparative sense, as there are still many difficult hills to overcome, stiles and other obstructions to surmount, broken or rickety bridges to cross, until at last we come to the choice of ways leading to the bridge of ease representing the placid hours of home-

life towards man's declining days. One is straight and easy, the other steep and confusing, with its forking and cross paths, but taken manfully will lead to the top of the commanding hill representing the summit of man's earthly ambition, from which an easy path leads down to bridge across which the wanderer finds a delightful and restful garden, with seats for rest and fountains of refreshing waters. Beyond and along a careful sloping path is the final rest—sombre, yet strangely enticing, to the weary foot and subdued spirit of the pilgrim of life.

Such then is the spiritual character of the, to us, new style of gardening, but to the peoples of the East so old that at the opening of the Christian era its beginning was even then lost in the obscuring mists of the long and unrecorded past.

Japanese Methods of Cultivation.

JAPANESE methods of gardening and agriculture are at present engaging the attention of western peoples. That their methods of food plant cultivation are good may be readily inferred from the fact that Japan can raise food-stuffs on her 21,321 square miles of tillage lands sufficient to support a population of 48,500,000 people, together with more than 2,600,000 head of horses and cattle, the majority of which are labouring animals. In other words, each square-mile of cultivated country can support 2,277 people and 125 working horses and cattle. Prof. King, who investigated the Japanese methods of cultivation on the spot, has explained how this is done. Every bit of possible fertilising material is carefully saved, and catch crops are grown to be ploughed or dug in so as to increase the amount of organic matter in the soil. Most of the fertilising material is used in the form of composts, carefully mixed and sheltered from the weather. Wood ashes and ashes from burnt rubbish are also used. In other words, the industrious Jap, by thorough tillage and the intelligent use of fertilisers, gets heavy yields of crops, and therefore secure a good return for his skilful labours on the land. It is well to remember this in view of the present popular notion that Japanese gardens are fantastic combinations of rock and water and dwarf trees, when the real facts are that they as a nation are in the forefront of intensive culture, and that what is known as a "Japanese garden" is merely a pleasure spot, built and maintained to satisfy the oriental artistic taste and love for the symbolic in all creative works in the domain of art.



Irises.

Tall irises beneath the rushing rain

Bend and recover;

Like butterflies that earthly loves retain

Their bright wings hover.

In the blue intervals of scudding showers

Sing out the birds;

And poised and swinging in their sheaths the flowers

Drink in their words.

Notes from Glasnevin.

By R. M. POLLOCK.

Eremurus.

VISITORS to the Botanic Gardens, Glasnevin, can hardly have failed to notice during May and June, in the herbaceous borders and in other positions through the grounds, the tall stately *eremurus*, standing well above the surrounding growth. These *eremurus* are natives of various parts of Asia. *E. robustus*, one of the

best, is a native of Turkestan. The flowers are pale pink in the bud, but turn almost white when a few days open. *E. robustus* variety *Elwesianus* has good pink flowers, borne closely together on tall strong stems. This variety is a strong and vigorous grower, and quite the best. There is also a white form of this which is very pretty. *E. himalaicus* is a pure white coming from the Himalayas. Three others—namely, *E. spectabilis* from Asia Minor, *E. turkestanicus* from Turkestan, and *E. Bungei* from Persia—are all various shades of yellow, but they can hardly be classed with those first mentioned, as neither in colour nor height are they as remarkable. In their own way, of course, they are interesting. Several hybrids have been raised, among them *E. Him-*

rob, a hybrid between *E. himalaicus* and *E. robustus*; *E. Shelford*, between *E. Bungei* and *Olgae*, the latter species coming from Turkestan; and *E. Warei*, a good yellow. Seedlings from this last named hybrid give some very pretty variations. These *eremurus* have proved to be perfectly hardy in our gardens, and they certainly are a great acquisition to them, but flowering with these plants is a matter of strength, and unless they are healthy and strong, good tall flower spikes cannot be expected. Some of the plants at Glasnevin were over 9 feet high, and all the plants flowered better than they had done before. Care should be taken in the spring, when the plants begin to move, not to let the damp collect in the

top of the young leaves as they rise above the level of the ground, and a light covering of fibrous material during the winter will not be misplaced. In *The Garden* for December 17th, 1881, in a note on *Eremurus robustus* and *himalaicus*, the following appears:—"The plants must be very striking in the sun when in flower, but whether they are likely to be ornamental and lasting enough in our gardens to make them permanent occupants thereof we cannot say without seeing them growing. We believe that at least one of these species has flowered with Mr. Gumbleton for the first time

in Europe." The accompanying photograph of a group in the Glasnevin Gardens may interest those who intend planting. There is no doubt as to their being "ornamental" and "permanent occupants"!

Sarracenias.

In connection with my remarks on *Sarracenias*, which appeared in the June number of IRISH GARDENING, it may be of interest to many to know that *S. purpurea* and *S. flava*, both, as before stated, natives of North America, have been successfully established out of doors in many gardens in Ireland and elsewhere. On one occasion some were found by a botanist flowering in a bog in the King's County, who was afterwards bitterly disappointed when he was informed that his record for these



Photo by]

EREMURUS.

[J. W. Besant

From a group growing in the Botanic Gardens, Glasnevin.

as native plants could not be accepted. There are, however, a few records of the plants having established themselves permanently, and spread from seed without any protection in the British Isles. One of the most interesting cases is that in the garden of Sir Edmund Loder, Bart., Leonardslee, Horsham, Sussex, where, on a sharp bank sloping south west, *Sarracenias* have not only established themselves, but have also spread from seed, and I have myself had in my hand some of these seedling plants when they were scarcely two inches high. They were growing in a natural piece of bog of heavy peat of sphagnum, sharply sloping and resting on shaly rock.



TEMPORARY RESEARCH STATION OF THE DEPARTMENT OF AGRICULTURE FOR THE INVESTIGATION
OF POTATO DISEASES, CLIFDEN, CO. GALWAY.

Notes on Plant Diseases.

Potato Diseases.

THE potato is perhaps one of the most important of our cultivated plants, but unfortunately is subject to a considerable number of fungoid diseases. During the past ten years or so great developments have taken place in Ireland in the matter of spraying the potato crop with Bordeaux mixture against the most prevalent of these—viz., the ordinary potato-blight—and with excellent results. It is probably partly due to the increased attention devoted to the crop in the matter of spraying that those other diseases of the potato which cannot be controlled by this means have been brought into more prominence and that a desire has sprung up for more knowledge concerning the diseases themselves and for a means of combating them. With a view to supplying this, the Department of Agriculture and Technical Instruction for Ireland established last year in the neighbourhood of Clifden, Co. Galway, the temporary research station, a photographic illustration of which we publish on this page. A general account of the work

carried on there last summer was published in the Department's Journal for January last, and we understand that the investigations are being continued during the present season, the work on a large number of experimental plots being now in full swing. Some of these plots are shown in the photograph, while in the background the small laboratory will be seen.

Gooseberry "Cluster-Cups."

Judging from a number of specimens sent in recently, the gooseberry "cluster-cup" fungus seems to be somewhat prevalent this season. The attack is first seen on the berries and young leaves in the form of reddish spots, which, as they get older, turn to a bright orange colour. On the leaves these spots are more or less cushion-like, and on the berries they cause some distortion. After a time the surface of the spots develops a more or less honeycomb-like appearance owing to the development of a number of minute cup-like structures which contain the bright orange-coloured spores of the fungus. The latter belongs to the large group of "rusts," many of the members of which are characterised by producing three

distinct kinds of spores in succession. Most of these—and the gooseberry “cluster-cup” fungus is one of them—do not pass through their whole cycle of development on one and the same host plant, but require at least two for the completion of their life histories. Thus the spores produced in the cluster-cup on the gooseberry do not germinate on the gooseberry but on certain species of sedges. When the sedges become infected the fungus produces on them two further kinds of spores, the second crop of which alone serve to re-infect the gooseberry. Hence, the preventive measures to be adopted in this case are (1) to gather all affected leaves and their berries from attached gooseberry bushes and burn them, thus preventing the spread of the fungus to the sedges, and (2), to keep all ditches and damp places where sedges are likely to grow well trimmed and cleaned so as to remove as far as possible the second host of the fungus, and so prevent the infection of the gooseberry. As a rule the fungus in question does not do a large amount of damage, nevertheless it should not for this reason be treated with neglect.

G. H. P.

Roses.

By O'DONEL BROWNE, M.D.

TIME draws near when I hope we shall all meet in Merrion Square to do honour to the Queen of Flowers. It will be my first experience of a July show in Dublin, and let us hope that the day and preceding evening will be cool, and let us hope that the worthy secretary of the show will have a large tin bath at some convenient place in each tent filled with water on our arrival—not for us to bathe in, but to replenish our tubes. Railway porters, cabs crossing tram lines, all tend to jostle our tubes about, so I hope we shall find the water when we arrive. It is no use telling us that there is a man with a water-cart somewhere about. That won't do. We want to be able to get a vase and replenish our tubes as soon as possible. Let us hope that Mr. Knowldin will oblige us in this point, and we shall have something good to say for him. If any exhibitor has to travel to the show let me warn him to keep his two eyes—one is not enough—on his boxes all the way from home, for some of us have suffered in the past.

Now, a hint or two about the judge. He is not only a judge but a chief justice, and a stern one to boot. Mighty particular he is in all respects, with an eye like a hawk that lets nothing escape him. He is not one of your so-called judges; on the contrary, he is *facile princeps*, one of the best living authorities on the rose at the present. Some years ago he carried off the amateur championship in England, but of recent years

pressure of business has made him, much against his will, give up to a great extent that part of rose-growing wherein he excelled—viz., rose-showing. That he has a most determined manner about him, I can vouch for, for he told me once of a terrible fate that befell him. He and another exhibitor were travelling to a great show in England in a cart loaded with boxes, and when nearing a hill near the station the belly-band on the harness broke, with the result that the cart tipped up. The other exhibitor was for turning home, but not so our worthy judge. Sending the boy in charge on to the station to delay the train, he mended the harness with his bootlace and packed up again, and drove to the station. Next day, against England's best men, they won (I hope my memory is right here) the seventy-two, forty trebles, twelve vases, and goodness knows what else. That he can grow good roses no one will dispute, seeing that on one occasion he showed a bloom of Mrs. John Laing, and got the medal for the best H. P. in show. A day or so later he showed the same bloom and won the medal for best bloom in show, and a couple of days later still this same bloom figured in his winning stand. Every one will own that the late George Prince was a terror in the “eighteen yellow” class with Comtesse de Nadaillac, but he often had to go second to W. J. Grant showing Marie Van Houtte. Rest assured, reader, that you will get fair prices and civility from W. J. G., and do not forget that we in Kildare are proud of him, for he first saw the light in this county. Beneat, do not forget your labels, do not overdo, dress your flowers, and put your best foot forward, and let us show him our best.

So far as I can judge it will be a good show, but there is just the likelihood of some of our best flowers being over. There is one point I would very much like to see cleared up. So far as I can see the N. R. Society has never made out a list of what constitutes a dark or light rose. There are many flowers on the borderland of light and dark. Take S. M. Rodocanachi, for instance, “glowing rose” the catalogues put it, but this hardly describes the colour. It is very doubtful if it is a dark rose—in fact I should place it as a “light” variety, but there are others who might say to the contrary. Where are we to draw the line? Maman Cochet is shown as a light variety, though in my opinion it is darker than S. M. R. At present it appears as if it rested with the judge to say what in his opinion when judging is to pass or disqualify a particular variety. We must get this point settled, and who can settle it better for us than the man who is coming!



BORDEAUX-SUGAR MIXTURES.—From the result of an extended series of experiments by A. Kolliker with Bordeaux spraying fluid, to which a little sugar or molasses has been added, it would seem that distinct advantages arise from the presence of the sugar. It is among other things claimed that the keeping properties of the fluid are increased, and that owing to certain chemical changes that ensue, as a result of exposure to the action of the air, free copper is liberated, and that this increases the fungicidal action of the wash.

Weeds.

AT this season of the year the subject of weeds is of peculiar interest to all cultivators of the soil.

Every one is, of course, agreed as to the importance of keeping cultivated crops as free as possible from these wildings, yet their constant re-appearance after repeated destruction, their natural vigour and general luxuriance of growth are not altogether disadvantageous to good gardening. Weeds are really aids to efficiency, inasmuch as they keep the hoe busy throughout the whole summer months, and thus the soil is perforce kept open to an inter-change of air and the surface furnished with a fine loose mulch that tends to conserve the soil with water throughout the long days of drought. That weeds in themselves are harmful, we know too well; they take up much needed space and rob the crop plants of food, air, light, and moisture. They also harbour or otherwise encourage harmful insects and injurious fungi, and so induce unhealthy conditions of life. A most useful handbook dealing with the weeds of farm and garden, written by Mr. Harold C. Long, of the English Board of Agriculture, has been recently published by Smith, Elder, & Co.* It contains eleven chapters, and is

illustrated with over 100 original illustrations. The author has brought together an interesting compilation of facts concerning the subject upon which he writes, and gardeners and land stewards will find it invaluable as a work of reference. To get some notion of the number and variety of seeds dormant in the soil, the author marked off a square yard of soil in a well-cared-for garden, and on the 17th May, 1909, removed by hand all the seedlings, and then sorted and counted them. He gathered 1,050 seedlings made up of over fourteen different species. If this is the output in a "weedless" garden, what must be the potentialities in a neglected one? Knowing that a common groundsel, for example, may produce 10,000 or more seeds, and shepherd's purse over 4,000, in a

single season, the utility of preventing the seeding of annual weeds in a garden becomes very apparent.

Land can only be kept fairly free from weeds by thorough cultivation, by the prevention of seeding, by sowing clean seed, adopting intelligent rotation of crops, and by keeping hedges, ditches and other boundaries as clear as possible of wild plants likely to encroach upon cultivated areas. As preventatives, troublesome perennials such as bind-weeds, couch grass, &c., may be deeply buried in trenches dug out for deeply rooting plants. Lawns, if infested with plantain or daisies, may be improved by sowing a mixture of sulphate of ammonia and sand, and for the eradication of stubborn subjects like patches of nettles, creeping thistles, &c., the American plan of covering with big sheets of tarred paper to

exclude light may be tried. For paths, a fairly effectual weed killer may be used consisting of 1 part of carbolic acid thoroughly mixed with 4 pints of water. The usual proprietary "weed killer" for paths contains sodium arsenate as its chief constituent; it is highly poisonous. An attempt was made to discover the "worst" weeds on arable land by getting the opinion of cultivators throughout the whole length of Britain. Ireland is not included, but we imagine somewhat similar results would be obtained in this country as well. Beginning with the most prevalent we have



THE COLTSFOOT IN SPRING.

(Showing its branched underground runners, strong fibrous root system, and clusters of flowing stems produced before the unfolding of the large foliage leaves.—From Long's "Common Weeds of Farm and Garden.")

(1) couch, (2) charlock, (3) docks, (4) thistles, (5) coltsfoot, (6) chickweed, (7) bindweed, (8) spurry, (9) poppies, and then follow wild oats, knotweed, fat-hen, red-shanks, groundsel, annual poa grass, nettles, cleavers, shepherd's purse, &c.

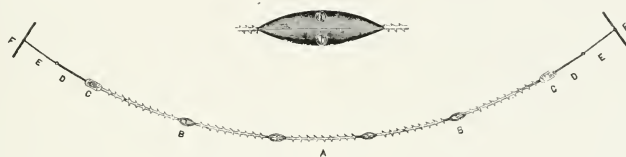
A very important chapter is devoted to the subject of our native poisonous plants, taking them in their botanical order. The following are the plants listed:—Monkshood (*Aconitum Napellus*), all parts are poisonous, but the root deadly so. A gardener told us only the other day of a mistake he made (luckily detected before any harm was done) in sending into the kitchen roots of this plant in mistake for horse radish. Buttercup, several species frequently harmful to cattle, the celery-leaved buttercup and lesser spearwort being especially dangerous. Wood anemone. Larkspur, seeds very poisonous. Hellebore, cows, according to Henslow,

* "Common Weeds of the Farm and Garden," by Harold C. Long, in collaboration with John Perceval. London: Smith, Elder & Co.

have died from eating the trimmings of the fetid hellebore, mixed with other herbage, when thrown out from a shrubbery into the field where the cattle were. Common poppies (the drugs opium and laudanum are obtained from one of the species). Greater Celandine (*Chelidonium majus*) Charlock, the seeds of which when eaten cause inflammation of the intestines. Corn cockle, the seeds of which are especially harmful, hence the importance of keeping them out of corn intended for milling purposes. Spindle tree (*Euonymus europæus*) and common buckthorn, the berries are dangerous to children. Lupins. Laburnum is described by Henslow as certainly one of the most poisonous of all trees cultivated in gardens. Frequent cases of child poisoning from eating its pea-like seeds have been recorded. Cherry laurel, all parts are poisonous. It is stated that fifteen berries of the shrub are sufficient to cause death in a child. Hemlock is well-known as a deadly poisonous plant. Water-hemlock and water-dropwort are virulent poisons; the leaves of the latter have been mistaken

Meadow Saffron (*Colchicum autumnale*) is poisonous in all its parts, and is particularly dangerous to all herbivorous animals. Herb Paris is poisonous, but it is not a common plant. Lords and Ladies (*Arum maculatum*) are great favourites with country children, and fatal results have followed their eating its bright, scarlet berries.

A chapter is devoted to weeds of ponds, rivers, and ditches, which will be of especial interest to gardeners. We have been frequently asked as to the best means of destroying water weeds, and this chapter gives full information upon the subject. Different types of cutting tools are given, and their use explained. The copper sulphate method, so frequently used in America to get rid of green scum, is noted. One part of the sulphate in a million parts of water is sufficient to destroy the growth without doing the slightest harm to fish or other animal life. It is recommended to spray the scum with a spray made up of one and a half ounces of the sulphate dissolved in two gallons of water.



ZIENSEN'S WEED-CUTTING SAW.

A—the saw-like teeth B torpedo-shaped sinkers C—clamp D—wire E—rope F—handle

From Long's Text-book.

for celery and its roots for parsnips with disastrous results. Fool's parsley is poisonous in all its parts. Rhododendrons and azaleas are fatal to cattle. Deadly Night-shade (*Atropa belladonna*) is particularly poisonous in its roots, and its berries only less so, and being attractive to children are therefore dangerous. Henbane. Woody Night-shade (*Solanum dulcamara*), the stem to taste is first bitter and then sweet, hence one of its common names "Bitter-Sweet." Its berries are liable to be gathered and eaten by children. Black Night-shade (*Solanum nigrum*), its berries are said to be poisonous. The new fruit "Wonder Berry" is apparently a variety of this plant. Thorn Apple is another solanaceous poisonous plant. The potato is a member of the same family, and according to Henslow the potato contains a toxic substance that may be fatal to some animals, and he mentions cases where old sprouted potatoes fed to horses acted as a deadly poison to them. The foxglove is well-known as a poisonous plant. Spurge laurel (*Daphne*) bears poisonous berries, as does also Mezereum (*D. Mezereum*). Dog's Mercury and Annual Mercury are said to be poisonous. Caper Spurge, the seeds are dangerous and ought not to be used. Box is poisonous to stock, and clippings should not be put in their way. The Castor Oil plant, the seeds are dangerous to man and other animals. Sheep and fowls have been frequently poisoned through eating them, or their crushings after extraction of the oil. Yew is certainly dangerous to stock, and clippings should never be placed within the reach of cattle. Cupressus is also suspected.

Chapter X. deals with the destruction of weeds in lawns, drives, &c. Isolated coarse plants like dandelions may be killed by the application of a thimbleful of sulphate of ammonia. In the case of moss—raking and harrowing, the application of a mixture of soil and lime with a little guano, or watering with a solution of sulphate of iron, are recommended. Fairy rings may be destroyed by a dressing of slaked lime or of basic slag. For gravel paths—salt, using sufficient to whiten the surface, a solution of washing soda in the proportion of 5 lbs. to 10 gallons of water, a 5 or 10 per cent. solution of copper sulphate and yellow arsenical sheep dip are among the specifics mentioned. A chapter in seed testing and appendices conclude a most valuable contribution to the literature of country life. It is the only work we know that deals so fully or so well with the subject of weeds, and we most cordially recommend it to the notice of our readers.



CITY, SUBURBAN AND WINDOW GARDENING.—This is the title of a little sixpenny booklet, written by D. Grant Melver, and published by Messrs. Dawbarn & Ward, in their Country House Series of Practical Handbooks. It is certainly "practical," the information given being precise, clear, and entirely to the point, and illustrated by numerous working plans, drawn to scale wherever necessary. It is just the right sort of guide for suburban amateurs to follow in their pursuit of a delightful relaxation from ordinary work-a-day duties,

Flower Shows.

MR. CURTIS, so well-known as the Honorary Secretary of the National Sweet Pea Society, has written for the "Handbook of Practical Gardening Series" a little work * that must prove immensely useful to every one interested in growing flowers, fruits, and vegetables for exhibition. He deals with every possible point in the formation of horticultural societies and in the conduct of shows, as well as giving information concerning the best varieties of plants to grow, the merits and faults of particular subjects, hints on their cultivation and preparation for exhibition, staging, &c.

As an example of the method of treatment we take an extract from the article on sweet peas:—

"Sweet peas are exhibited in vases, and rarely otherwise than one variety in a vase: from twelve to thirty spikes in a vase according to the grade of the competitor and the importance of the class. . . .

"*Merits*—Large blooms; firm texture; long, stiff stems; not less than three flowers on a stem; standard, erect; waves or only slightly hooded; standard, wing and keel to be in such proportions to each other as will constitute a harmonious and well-balanced flower; brilliance or purity of colouring; freshness, harmonious arrangement of the varieties in a collection.

"*Faults*—Crowding; a mixture of stale and fresh blooms, malformed flowers; spots or streaks in the colouring—caused by cutting and packing the flowers when damp, or by an excess of water given to the plants just previous to gathering.

"*Hints*—All orange and scarlet sweet peas and some with deep blue shading are liable to 'burn' or 'scald' during hot sunshine; these should be lightly shaded with cheese cloth or butter muslin. Put the stems in water as soon as cut from the plants, and let them stand in water in a cool, shady room or shed for at least two or three hours (three to six hours are better) before packing them. Pack the spikes in flattish bunches and enfold each bunch in one thickness of tissue paper. Pack the bunches in single layers, using several sliding shelves, if large quantities have to be packed in big boxes. The boxes in which sweet peas are conveyed to the flower show should be ventilated by means of air-holes bored in the sides. When unpacked the flowers should 'rustle' together when lightly shaken; if they do this they are in good condition. Stand the spikes in water after cutting a quarter of an inch from each stem to allow free absorption of water."

The book, like all the volumes in this excellent series, is beautifully illustrated, and contains 109 pages of clearly printed matter. It may be taken as an authoritative work of reference in all matters relating to flower shows, while to promoters of local horticultural societies it will be simply invaluable. All old exhibitors will appreciate Mr. Curtis's painstaking work, while beginners will be well advised to carefully study its instructive pages.

* "The Book of the Flower Show," by Charles H. Curtis. London: John Lane. 2s. 6d.

Vacant Land Cultivation.

A SOCIETY, known as the Vacant Land Society, was established in London in 1908, which has for its object the utilisation of land lying idle in or round cities or towns, with a view to the providing of allotments for the use of casual labourers. An off-shoot of this Society has been recently formed in Dublin, and three plots of vacant land has been already acquired by the committee and are now being worked by ordinary city labourers either in the evening or on days when they find themselves out of employment. One of these pieces of waste land is on the site of an old brewery in the Coombe district, quite in the heart of the poorest quarter of the city. It is about 61 by 66 yards in area and divided into eight plots, each of which is about 45 by 12 yards in size. Another is at Clontarf, and is larger, there being 11 plots, each about 57 by 22 yards. The third, situate at Pigeon House Fort, is larger still. It belongs to the Corporation, and has an area of about 5 acres.

We have just returned from a visit to the Coombe allotments, and can testify to the excellent work that is being carried on there under conditions that would perplex the ordinary gardener. The work of preparing the ground commenced on Easter Monday last upon a piece of rough land that required considerable labour with pick and spade to convert it into soil fit to grow any cultivated crop at all. After this vigorous system of tillage, the crops were heavily manured with dung supplied by the Corporation, and now they carry very fair crops of potatoes, healthy-looking cabbages, beds of lettuces, and rows of peas and beans, and in some plots are even celery, vegetable marrows, and sweet peas. There are practically no weeds on the plots, the paths are tidy, and the whole garden has a general air of being well looked after and cared for. There is one plot only that is not entirely under a growing crop, and considerable credit is due to all concerned in what may be certainly considered as a very successful undertaking. The society, after securing the temporary use of the waste land, proceeds to allot it out to the most suitable applicants. In addition to the free use of the allotment, the holders are also given the free use of tools, which must not be removed from the ground, and after using must be cleaned and put away in a house provided for the purpose. Seeds to the value of 6d. per square rod of prepared ground are provided, the repayment of which may be deferred until the crops are gathered. Should the land while carrying a crop be required by the owner, the value of the lost crop will be given to the allotment holder. The work is done under the guidance of a superintendent, who acts as an instructor, and everything must be done to his satisfaction if the holder is to continue to enjoy the free use of the land.

It appears to us a most excellent scheme, and judging from what we have seen it presents no real difficulties, at least no insurmountable difficulties, in carrying it through. We hope the Society will extend its work in Ireland, and that it will receive the support of all who are interested in the social progress of the country.

General Notes

Canker.

CANKER is one of the most troublesome diseases that affect our fruit trees. Its appearance is due to many causes, such as coldness of soil, too much shade, infection of wounds by special bacteria or spores of particular kinds of fungi, &c. When it appears there is apparently only one remedy, and that is to cut out the whole of the canker area and disinfect the freshly made wound with an antiseptic such as Stockholm tar or spirit of salts (hydrochloric acid), or protect with a layer of grafting wax. Some growers believe in simply dressing the wound with grease, but whatever method is used the root idea is to keep the fresh wound free from infection from wind-blown spores. The sooner this is done the better. It is at the same time advisable to refrain from pruning and to stimulate the growth by incorporating with the soil in the area of the feeding roots a generous application of phosphates and a moderate dose of powdered sulphate of iron. The latter will act as a tonic and contribute to the general vigour of the tree. Mon. Charles Baltet recommends the painting of the trunk and large branches with a mixture of clay, cow-dung, and glue or milk. We have not tried this, but he says that both cold and direct sunshine may induce canker, and the course recommended will act as a protection against these two inducing causes.

Aphis Pest.

IN the case of currant bushes infested with these injurious insects, the worst affected parts being usually the tips of the branches, we have found it to be the easiest and best plan to get rid of the pests, to take a basin containing a strong solution of quassia and soft soap, and go among the bushes and pull down the aphis-covered tips and dabble them in the insecticide. It may be necessary to repeat the operation in a day or two, but there is no doubt as to its efficiency in the long run.

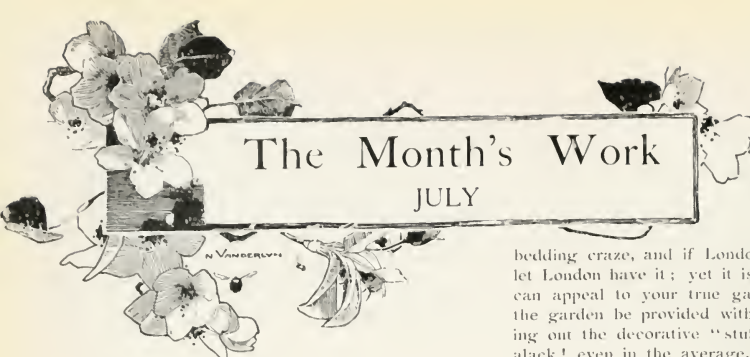
American Blight.

A CORRESPONDENT asks advice as to the best remedy for American blight. It is an ever-recurring question that has been answered many times in this and other gardening papers. It is apparently a disease against which fruit growers will always and should always be fighting. Let it only get sufficient headway and it will rapidly ruin a whole plantation. It is particularly disastrous in the case of large trees, and once established it is extremely difficult to eradicate. There is no excuse, however, in letting it spread in a young orchard, as there it is comparatively easy to ward off its attacks. Whenever and wherever it appears the spot should be well scrubbed with a hard brush dipped in either a solution of ammonia, alcohol, or a mixture of soft soap and an infusion of nicotine. It is said that even urine or manure water or refuse oil will serve the same

purpose. The scrubbing should be repeated after the lapse of a week or a fortnight if necessary. Any shoots very badly affected had better be cut off and burned. As most fruit growers know the trouble is due to the presence of tiny plant lice (or *aphides*) that in this particular case exude a woolly secretion which serves as a protection against possible enemies. These little creatures hibernate on the roots during winter. Therefore in the case of large trees, and as soon as the leaves have fallen in the autumn, some of the earth should be removed from around the base of the stem and refilled with lime and soot. This will prevent hibernation and cause death through frost during the winter months.

A Lime Sulphur Wash.

MR. E. S. SALMON has been experimenting with a lime-sulphur wash first recommended, we believe, by the mycologist of the Pennsylvania State Agricultural College as a substitute for Bordeaux mixture in summer spraying. It is well known that the latter spray is frequently harmful to foliage in certain cases (Cox's Orange Pippin, Bismarck, Worcester Pearmain, &c.). The further advantage is claimed for the lime-sulphur wash that it adheres strongly to the surface of the leaf even after rains. The wash is made as follows:—First a concentrated mixture prepared with quicklime (in lumps), 50 lbs.; flowers of sulphur, 100 lbs.; water, 50 gallons. Ten gallons of water is put in a large metal (not copper) vessel and placed over the fire, then the 50 lbs. of quicklime is added. When the slaking is well started, the 100 lbs. of sulphur is gradually added and mixed well into a thin even paste, taking great care that no lumps of sulphur are left unmixed. If too thick to conveniently work more water may be added. When thoroughly mixed make up the quantity to 50 gallons by adding water. Boil for one hour, when the mixture will assume an orange-red colour. Strain through butter muslin, put in a stone jar or barrel, and protect from air either by filling the jar or jars quite full and corking or by covering the surface with a mineral oil. From this concentrated stock the actual spraying fluid is made by dilution with water. In the experiments referred to from 20 to 23 gallons of water was added to each gallon of stock, bringing down the specific gravity of the fluid to 1.01. When diluted the fluid must be used at once. It has been found that different subjects are differently sensitive to this wash, and that, therefore, great care should be observed in its use, and in the case of first trials an experimental spraying should be made and the results noted. For example, it was found that the young tender leaves of roses under glass spraying was followed by scorching unless a very much weaker (by quite one-half) wash was used. It will always be safer to use a hydrometer (instruments specially scaled are sold at 3s. 6d.) in order to know the exact specific gravity of the fluid used. The wash should be applied by means of a fine nozzle, so that the spray falls as a kind of mist. When exposed to the air on the surface of the foliage the sulphur is released in the form of inconceivably minute particles that give the leaves the appearance of being covered with a white powder.



The Month's Work

JULY

Flower Garden and Pleasure Grounds.

By E. KNOWLTON, F.R.H.S.

BRIEF LIFE.—We have had the heat, and moisture has not been denied. Where good, smart work put the summer bedding timely in hand, completed it, and made all spick and span, there is now pleasure in the outlook. At the same time, fifty per cent. of the pleasure is that of anticipation, and no efforts may be spared to bring the flower garden to its fulness of beauty, and maintain it as long as our all too brief summer permits. To effect this, good soakings of water to some beds may still be helpful as an aid to proper furnishing, although, if all have had that commendable mulching of bog-mould mentioned last month, there will be less need for it, as evaporation from the free and porous, oft-worked soil will be checked. Violas as edgings or carpetings must be thwarted in what from now hence appears to be their one aim and object in life—viz., the production of seed-pods—and it is a good plan to pick off the pods as fast as they form, but a better one, to remove the fading flowers, the stronger growths where met with being pinched. All fading trusses of geraniums should be promptly removed, and strong growths pinched above a visible truss. One gardening friend is daily worried by "the family" to push things on, and he is sparing no effort to do so. Another will not be worried by "the family" till their return from London at mid-August, and he is wisely holding things back by keeping the bulk of the blossoms picked off, and persuading his plants into good habits by pinching. Circumstances alter cases; the moral is obvious.

A NEW FASHION.—We have heard invidious comparisons made between the sustained gaiety of bedding in the London Parks and that of even well managed private gardens. But the London County Council has a fine rate-roll to draw on, otherwise the quick-change business which is responsible for the barbed hints could not be carried on. How the changes are rung on—say a bed of Canterbury Bells to-day in their fading harmony to maybe a mass of lilies in the morning—is not enquired into, otherwise the labour and expense entailed would bring other reflections. Moreover, when the public has considered "its lilies in all their pristine purity, and things are getting stale. Heigh! Presto! and from

behind the scenes another transformation is effected, and all London chants "Te Deum" over its clever gardeners. It is not, really, a new fashion, although the later development of the

bedding craze, and if London loves it, by all means let London have it; yet it is scarcely a phase which can appeal to your true garden lover, even should the garden be provided with a manufactory for turning out the decorative "stuff" as needed. But and alack! even in the average, well-maintained garden, where help and reasonable outlay is not grudged, we know the strain imposed in spring by the bedding plants which have scarcely left their lodgings ere comes the cry of the cook for cucumbers, tomatoes, and—and everything else she knows cannot be ready.

THE FLOWER BORDERS.—*Inula glandulosa*, where grown in quantity, has given a fine glow to the borders, the way for which was prepared by the *doronicums*. One feels it scarcely possible to have too much of this *inula*, but one does feel sometimes during spring that some gardens are over *doronicised*. The *inula*, however, is far less weedy, although readily increased by division. Now (as we write) the big flaunting Oriental poppies are everywhere—in narrow borders, in wide borders, and all sorts of borders. How we should like to gather them all up into one imposing mass, in some semi-wild spot where distance lends enchantment to the view! We can scarcely imagine anything finer or more Turneresque in a summer landscape than half an acre of the same Oriental poppies (the crimson, not the hard orange-red), unless it be an acre, which would be seen for miles, and worth going miles to see. Old established roots are hard to transplant, but one capsule of seeds has inherent capabilities to furnish a county. The long-spurred *Columbines* are over, but they have been very satisfying. In one instance where seed is being saved we noted some of the poor, prim-looking, old thimble kinds, and we fear for a *mésalliance*. We have recently seen a fine clump of the distinguished *Iris ochroleuca*, each shaft-like growth fat with a developing spike. It is a plant we have a profound regard for, but cannot give the reason when in comparison with *laevigata* (*Kaempferi*), or even some of the Anglican forms, unless it be that we grew it for years without flowering it.

SWEET WILLIAMS AND BLACK-EYED SUSANS.—It would take a large garden and big staff, we suspect, to have even a fair percentage of the improved forms of old-fashioned and new-fashioned things so temptingly set forth in an up-to-date seed list. Every week one finds some writer expatiating on one or other thing he has taken in hand, beginning or ending his note with "not as well known, or grown, as its merit deserves." The phrase is getting so stereotyped that we can well imagine the printer man having a supply set up in type. But alack and alas! we cannot have everything, but we can ring changes at times. One of our never-to-be-forgotten ventures in this direction was with a packet of Sweet Williams ("good strain") sown in boxes at this

season and transplanted in autumn a thousand strong, and not one distinct variety of the forty or fifty we were able to count but what was worthy of a place in the borders. Sweet Williams they were in every sense, but we have to go under glass for the Lass associated with the sweet one by old Dibdin in his rollicking sea song, and Black-Eyed Susan is *Thunbergia alata*, as the late Mr. F. W. Burbidge would relate, with a twinkle in his eye, when telling the story of a comrade of his youthful days who, asked by a lady the name of the beautiful flower, replied—"I don't know the proper name, ma'am, but I calls 'em Black-Eyed Susans."

CREEPERS AND TRAILERS.—The one grudge we have against our Japanese ally in the display of his wonderful gardening art is that while he must have bridges, the bridges must be bare because, forsooth, young Japan diverts itself by riding gee-gee fashion down the convex handrail of the convex bridge. But what a delightful host is a rustic bridge for such creepers and trailers as *Clematis montana*! And what a glorious thing is the good form (*grandiflora*) of the mountain clematis! So good, indeed, that we cannot but show a warm welcome to the new August flowering *C. M. Wilsoni*, whilst *Rubens*, the red spring flowering *Montana*, must not be forgotten. The moral here is that every dead or decrepit tree in the pleasure grounds should serve the purpose of host to these mountain clematises instead of being an eyesore condemned to removal. Merely plant *Montana* at the base of a tree, show it the way it should go by tying its trailing growth to the stem for a start, and the plant will do the rest; neither will it fall out with the coarse-growing Virginian creeper if bearing it company, and for which purpose it is eminently adapted. Fortunately our most telling creepers and trailers seem to be those which require but little tying, and tying must always be considered a necessary evil, detracting from natural charms. True, climbing roses want help in this direction, but the less given the better, and we could not but notice last season a lovely *Hiawatha* which had found enough snags and crutches in a dead *Acacia* to support itself with all the free, wild grace of Longfellow's delightful poem. By the way, why has *Hiawatha* not a companion in Minnehaha (*Laughing Water*)?

FLOWERING SHRUBS.—Most gorgeous of all the flowering evergreens, of course, are the rhododendrons, and we have often thought it rather anomalous that the fewer there are in the pleasure grounds the less attention seems to be paid to them. Certainly none should grudge relieving them of their seed-pods the moment the flowers are over—an operation which, where large collections are grown, is made quite a business of. The same too with *Azalea mollis*, and when we come to such things as the *Philadelphus*, the *Mock Orange* in its varieties, which give the best bloom on last season's wood, as well as many others, which but a cursory observation of habit will point out, the relief afforded by the removal of the spent flowered wood is obvious, not to mention the fine growths which are made under the genial conditions of light and air, which otherwise, to a great extent, they are deprived of. Where flowering shrubs are really well done, we find that a good mulching of old manure and leaf-mould, with an occasional soaking to help on the new growth, is not denied them, even the rather exclusive rhododendrons fairly revelling under a little kindness of this description.

The Fruit Grounds.

By A. BARKER, Carrigoran, Newmarket-on-Fergus,
Co. Clare.

A VERY busy month is July in the fruit grounds, with many and pressing demands, and granted favourable weather conditions the calls to gather plentiful crops of fine small fruits may be met with considerable pleasure and gratification. Good crops of small fruits are, I believe, very general, and they only need fine weather to finish them off to our satisfaction, and this, it is to be hoped, may be vouchsafed to us, as good as predicted by "the weatherwise."

So soon as strawberry plots are cleared of fruit, remove all useless mulching and weeds, also cut away all runners which are not required to form plants for making new beds or plantations on such beds as are to remain for further use. If the ground has become very dry give a thorough drenching with water; if manure water is available, so much the better, if not, a sprinkling of guano or some approved fertiliser before the watering commences is of considerable benefit.

To ensure best results the preparation of runners to form new plantations must be taken in hand at once. A variety of methods of preparing runners for planting are practised. My plan is—having fixed the number of plants to be planted, a corresponding number of 3-inch pots are washed and filled with a compost of two parts loam and one part leaf-mould (ordinary garden soil would do quite well) made quite firm. The pots are stood in batches between the rows; draw up the runners, peg the best on the compost, and cut away those not required. There is no need for drainage of any kind in these pots. Runners thus prepared early in the season, and duly planted in their permanent quarters, produce an excellent crop of fruit the first year after planting. Very good plants may also be obtained by pegging the runners on pieces of turf cut about 3 inches square, and laid grass side downwards.

Where considerable breadths are to be planted a good plan is to lay beds of loose earth between the rows and let the runners root into the material; thus treated the runners remove with plenty of roots, and quickly commence new growth when planted out in new quarters. It is essential to freely water the runners in dry weather. Always take the runners from vigorous, healthy plants. I make a practice of layering the runners on the plants new planted in previous year. If the ground for new plantations is not already in good order, lose no time in getting the ground trenched or deeply dug, incorporating a liberal allowance of the very best manure obtainable. The varieties we grow here are *Royal Sovereign* for earliest, *Mid-season*, *President*, *The Leader*, *Sir Joseph Paxton*, *The Captain*, this one is a very free cropper, fine coloured, medium-sized fruit, and grown purposely for jam. We have *Givon's Late Prolific* and *Latest of All* for late fruits. *Givon's* is by far the best, generally speaking. Raspberries should have the old fruiting canes cut away after being cleared of fruit, and the young canes thinned more or less according to the number of canes thrown up.

Black currants are very much benefited by a good thinning out as soon as the bushes are cleared of fruits, and especially so in the case of large old trees, or where they are planted in plots and any way over-crowded. Cut out a quantity of the old fruiting wood, the highest branches in centre of bushes or any branches too much inclined towards the ground; grub up and burn any bushes not worth keeping over for another year. This thinning or summer pruning is equally applicable to all bush fruits as the bushes become cleared of fruits, except where red currants or white are left hanging very late in the summer; in such cases the bushes may be left for the general winter pruning. Pay proper attention to the training of all wall fruit trees that have not already filled their allotted space, and persevere with the pinching or pruning of all trained trees, whether on walls or wires, and keep the young shoots on peaches periodically tied down to prevent their being broken and to properly furnish the trees. Pinch all secondary growths to one or two leaves, as soon as they break, on trees previously pruned. Keep the centres of bush trees well cleared of side growths, cutting them out at six or seven leaves from base of shoot to admit plenty of light and sun through the trees.

If the trees through pressure of other work have been allowed to make considerable growth, do not cut away a great quantity of growth at once, thus causing an undesirable check on the root action, but remove, say, half the growth one day and the remainder after a couple of days more have elapsed.

There is considerable divergence of opinion amongst hardy fruit growers as to the advisability or the benefits to be derived from summer pruning. Fine crops of fruit may and are frequently produced without the aid of summer pruning, and it is an operation that calls for attention at a time when much other pressing work is to be done in all directions; but undoubtedly finer and better finished fruit is produced where more or less summer pruning is carried out; apples, for instance, that have been fully exposed to light and sun from commencement of their growth to finish will be infinitely better coloured than those that have been shaded with foliage or a thick

walls or in open grounds. Give liberal supplies of water to fruit trees carrying heavy crops of fruit, and to all new planted trees, in case the rainfall is insufficient to



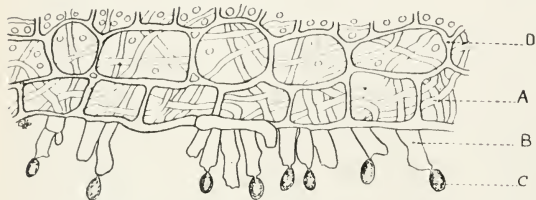
PEACH BRANCH AFFECTED WITH CURL.

keep the ground well moist. If there are difficulties in the way of affording frequent waterings, a mulch of the best available material for preventing rapid evaporation will materially reduce the necessity for waterings. (Do not allow birds to scatter the mulch in their endeavours to find food in the moist ground.)

Where too heavy crops of fruits are swelling away, thinning is very advisable, and on young trees, or such as have not been many years planted, is absolutely necessary to enable the trees to make satisfactory wood growth.

Peach Curl.

A CORRESPONDENT sends us specimens of this troublesome disease. It is caused by the attack of a fungus known to science as *Exoascus deformans*. Its thread-like hyphae forage among the living cells of the host plant and cause the curled appearance seen in the illustration. As the hyphae penetrate into the stem itself and hybernates there the only remedy is to cut away and burn all the affected branches. Spraying, at best, can only prevent the spread of the disease, it cannot cure the already diseased shoots.



UNDER PORTION OF VERTICAL SECTION OF LEAF OF PEACH AFFECTED WITH CURL.

(A) Living threads of fungus creeping among and feeding upon sap of leaf.

(B) Spore branch growing out into air. (C) Spore ready to be blown away.

(D) One of the attacked cells of leaf.

growth of side shoots; and where the variety possesses good flavour the sweetness and flavour will be good in proportion to the colouring, and these are very essential qualities in fruit both for private use and market purposes; the same remarks apply equally to all fruits on

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Irish Gardening

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IRISH GARDENING

VOLUME V.
No. 54

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

AUGUST
1910

The Summer Pruning of Fruit Trees



SUMMER pruning is a subject of very special interest to fruit growers. There appears to be much difference of opinion among gardeners as to the time of pruning, the exact method of pruning, and even

whether it is advisable to summer prune at all. If we approach the consideration of this question in an enquiring spirit we must first ask ourselves why do we prune? What special advantage do we seek to gain in pruning back the laterals of fruit trees in the summer months?

Advocates of such procedure contend that the removal of the younger lengths of leafy shoots in the first place, by interfering with "the regular flow of sap," arrests the normal growth of the young branches, and in the second place, as the direct result of this, the centres of vital activity are shifted to the lower or remaining portions of the pruned branches. The ultimate aim of the pruner is to induce the pruned branch to forthwith set to work and store up the surplus food in the tissues of the wood in the immediate vicinity of the buds, and to so influence their development as to bring about the conversion of most of them into flower buds. Furthermore, it is claimed that longer time is given to the work of ripening the wood, so that when the leaves fall later in the year the branches will be firm

in texture and hardy in constitution, and so be able to successfully withstand the most adverse weather during their season of rest.

Now, if these results can be secured by summer pruning, then summer pruning is a good thing, and those who practice it will gain by an increased yield of fruit. But unless the operation is done intelligently and with precise knowledge of the peculiarities of the different varieties dealt with, mistakes ending in many cases in disaster are sure to be made. What are the risks? If a tree is pruned in the full flush of growth, buds which under normal conditions would remain dormant start into growth to supply new leafy shoots to replace those removed. The balance of activity between root and shoot must be maintained always, and if, therefore, the pruning is done too early (that is while the root is still forceably sending up more water than the leaves can dispose of by transpiration) some at least of the normally dormant buds will burst, as before stated, into leafy shoots and entirely thwart the aim of the injudicious pruner. If, however, the pruning is done as the summer wanes and the intake of water is lessened by the lessening activity of the roots, then the aim of the gardener may be realised because of the then relatively sluggish flow of "sap" from the roots.

Now, when we consider the many possible varying conditions that influence the arrival of just the exact period of the year when it is safe to summer prune any particular tree, it is not surprising that fruit growers who know and recognise these factors refuse to regulate the pruning by any precise date in the calendar. They know, for example, that different varieties

of apple trees often vary as to the time of year the feeding roots decline in seasonal vigour and lessen the supply of water forced upwards into the foliage. They know too that soils differ in their water-holding power and that a dry season will materially influence root activity in the later summer. Briefly then it is only safe to summer prune when there is no possible chance of the premature bursting of buds as a result of the action, and, further, that it is impossible to lay down any fixed rules as to time for the operation. As to *what* and *how* to summer prune, with the exception of Cordons, no trees planted last autumn or spring should be touched, but with Cordons it is different. The laterals should be pruned during August, and as a rule not before the middle of the month. All side shoots may be cut off to four or five leaves from the base, and great care should be taken not to cut closer than four inches, meaning by that, that the branch should be pruned back so as to leave four or five leaves on the branch operated upon. With regard to other forms of trees, seeing that summer pruning in no way helps towards the formation of the tree, it is generally considered unnecessary—at least in large orchards—to spend time in summer pruning young trees until after they have been planted about four years.

In private gardens it is different. Here, where the trees are comparatively few in number, and where the gardener is not particularly restricted with considerations of monetary profit, summer pruning may be tried upon such individual trees as would seem to warrant the operation. The whole question of summer pruning is one that requires a good deal of further careful and systematic investigation, involving not only a study of individual varieties but also of stocks on grafted trees, the influence of soil, and certainly climate.

The climatic factors to study should include aspect, the temperature of soil and air, the humidity of air and rainfall, hours of sunshine, occurrence of early autumn frosts, and shelter.

Current Topics.

By C. F. BALL, Royal Botanic Gardens, Glasnevin.

THE rainfall for last June constitutes a record for this month for half a century at Glasnevin. The total fall was 5.21 inches, and in other counties it was still heavier. When the warm weather came in July growth was very rapid, especially where the land was

well and deeply cultivated. Many amateurs do not place sufficient importance upon hoeing ground, yet it is one of the most important factors in the cultivation of outdoor plants and vegetables. After a heavy downpour of rain followed by a hot sun the soil soon gets caked, then it cracks and loses the reserve moisture below the surface. Hoeing prevents this loss; the loose soil moved by the hoe acts in the same way as a mulch by conserving the water. When hoeing, every particle of the surface should be moved; in this way all weeds germinating, even though not visible, will be destroyed.

The cold, wet June was accountable for a shortage of sweet peas and roses at the Royal Horticultural Society Show held in Merrion Square on July 6th, yet in the tent for herbaceous plants were remarkably good exhibits, just showing how well the hardy perennials do in spite of inclement weather. A good stand of herbaceous plants was staged by Messrs. Alex. Dickson, including such plants as *Eryngium alpinum*, *Veronica spicata alba*, *Lilium martagon album*, *Centaureas*, *Astrantia carniolica*, with pretty heads of pink flowers, and some good varieties of Delphiniums.

Messrs. Lilley & Co. from Guernsey set up a gorgeous group of Gladioli, which are marked improvements on *G. Colvillei*, from which they have been derived. In the centre was a mass of *G. Ardens*, the most glowing colour of all. General Scott and William III. were also very good. *G. insignis* and *Ne Plus Ultra* were two good plants stronger growing than the others. From Captain Riall's garden was a choice selection of hardy flowers and shrubs, including *Dendromecon rigidum*, *Carpenteria californica*, *Abelia floribunda*, *Olearia macrodonta*, *Ozothamnus rosmarinifolius*, &c.

In the class for hardy cut flowers Mrs. Keith, of Cabinteely, won the first prize; the exhibit included *Carpenteria*, *Inula glandulosa*, *Achillea serrata*, *Hedysarum coronarium*, *Philadelphus microphyllus* and *Philadelphus maculatus*, *Delphinium*; *Paeonia* and *Francoa*.

The second prize was won by Lord Plunkett. In the exhibit were to be seen *Achillea millefolium rosea*, *Iris ochroaurea*, *Tropaeolum polyphyllum*, *Morina longifolia*, a spike of *Cordylina* and the graceful *Gillenia trifoliata*.

The third prize was won by Mr. E. Lee, while Mr. C. M. Doyne was commended. In this group were *Lilium Hansonii*, *Lychnis chalcedonica*, *Campanula Moerheimii*, *Dictamnus*, *Silene fimbriata*, *Sidalcea*, *Heuchera* and *Thalictrum aquilegifolium*.

The photograph shows how *Thalictrum aquilegifolium* grows wild on a mountain side in Switzerland. It is a plant well worth more extended cultivation. *Lilium Martagon* is also to be seen in the photo just coming into flower.

In Judge Bird's exhibit were several good things, as the new *Lupinus polyphyllus roseus*, *Primula capitata*, *Lychnis fulgens* and *Meconopsis cambrica* fl. pl.

The strawberry crop this year has been a very heavy one, although with the wet weather many of the early fruits rotted. The early Irish strawberries from Cork

Bray, &c., have to compete with the English in the market, and this year the prices dropped as low as 1½d. per lb. wholesale—not a very lucrative price for the growers. With this English competition at the commencement of the season it would point to the fact that it might pay the Irish growers to give more attention to the later varieties.

The first annual meeting of the "Vacant Land Cultivation Society" was held in the Mansion House on July 11th. The committee of the society is to work in close co-operation with the Unemployment Committee.

The Department of Agriculture has granted £50 towards the salary of the horticultural instructor for the coming year. Idle land is often the means of spreading obnoxious weeds, and the object of the society is to utilise vacant land and idle labour. Mr. J. Fells, who is honorary secretary of a similar society in England founded three years ago, reports favourable progress in London. This society has now 60 acres under its control, and on this area 500 men and women have plots in cultivation. The society estimates the gross annual value of the produce raised by the occupants of the plots exceeds £5,000, and that for every sovereign spent by the society the plot-holders have £5 worth of vegetables. When the society has obtained the loan of a piece of land it is fenced for the tenants, who are helped with seeds and advised on garden management.



Photo by

[C. F. Ball]

THALICTRUM AQUILEGIFOLIUM AND LILIUM MARTAGON

Growing wild on the Alps.

Hydrangeas.

A WELL-GROWN hydrangea in flower is a charming decorative plant, and there are few pot subjects to compare with it in artistic effect. For interiors in early summer it is without a serious rival. Hydrangeas belong to the Saxifrage family, and are natives of Java, China, Japan, the Himalayas, and North-western America. There are numerous species, but the most common one is *Hydrangea hortensis*, introduced to gardeners in Western Europe from China about the year 1790. In some favoured spots in Ireland it grows in the open ground, but it requires a mild climate and a pure air to enable it to succeed. The flowers may either be pink or blue, the latter colour being more popular. One can never depend upon a plant

producing blue flowers one year giving us the same tint the next year. The colouration may revert any year to pink. Growers for market usually resort to artificial means to produce blueness of bloom. It is generally believed that the presence of iron in the sap tends to the formation of blue, and, therefore, iron filings are often mixed with the potting soil to supply this metallic element. Others use a little alum in the soil to bring about the same result. It has been observed that soils that produce blue-flowered hydrangeas naturally and always are of a silicious nature, rich in organic matter,

iron and phosphorus, and with an absence of lime. A still further idea as to the conditions under which blue flowers are produced is that they are more likely to arise in late blooms upon well-ripened wood. An experienced grower of hydrangeas tells us that the following which appeared some few years ago in the *Revue Horticole* can be depended upon. This, in agreement with what has already been noted as to ripened wood, lays down the law that to experiment on young cuttings is useless; plants must be at least two years old, and healthy, before being taken in hand. Turn them out of the old pots, and wash the roots perfectly clean; then pot in either of these composts:—

(1) Sandy peat with 10 per cent. iron-slag, 3 per cent. sulphate of iron, and 5 per cent. dried and crushed animal manure.

(2) Sandy peat with 10 per cent. powdered slate, 3 per cent. sulphate of iron and 1 per cent. ammonia.

In either case the plants are to be watered twice a week with water in which 36 grains to the gallon of sulphate of iron has been dissolved. It will be seen that the comparatively high price of blue hydrangeas is to be accounted for in two ways; first, that they will be three seasons old before fit for sale; secondly, that the process is somewhat tiresome, and involves the stocking of ingredients not usually required in the potting-shed.

The *Hydrangea paniculata* is popular also, but not such a great favourite as the other. It is comparatively hardier, and will stand colder weather, as well as needing more severe pruning than *Hydrangea Hortensis*. Each should be pruned after the flowers are over.

Cuttings of both species should be grown as hardily as possible, and be stood out-of-doors in full sunlight (sunk in ashes) as soon as they are well-rooted

Roses.

By O'DONEL BROWNE, M.D.



THEY have come and gone for the present, and every one I have met has said "how good they were." Every one is sorry that the rose show in Dublin was ushered in by such unseasonable weather, and great were the mistakes made by many as to shading with the object of trying to keep back buds which promised to come and go ere the show. Fickle weather! it robbed us of our best, and the only wonder is that we amateurs who grow a few trees were able to make such a brave show in the time. It was a great bit of bad luck and nothing else that the sun which came after the show did not come before, then would we have seen dry weather roses, such as Mildred Grant, the Cochetts, Bessie Brown, and Ulster in

profusion. I must not forget that box of six Bessies from the winner in Meath. They only made us sigh for more. Then, again, where were Nadaillac, La France (good), Mawleys, &c. They have come since and gone, and when they came they were good. As a friend remarked to me—"We have not enough shows, it's no use growing flowers for show and trying to have them on a given date; better have plenty of shows, and then a man would now and then drop on a day." By heavens he would, and we should not have critics (abominable people!) passing comments on our flowers when they were "off colour." As I write there are splendid blooms of both Cochetts and the best and highest coloured Souvenir de Pierre Notting I have ever seen. A rose connoisseur stated that this would be a grand year for this charming Tea, and it is a fact that all flowers of Notting have been good. But poor Notting must shake himself if he is to remain, for there came a rival into this world of roses a few years ago which threatens to place even Comtesse de Nadaillac in the shade. This year, though not at all suitable for this champion, has shown us some wonderful blooms, and judging by the young rods coming from the base of my plants we are to have more and better flowers of this grand variety Madame Constant Soupert. There is only one thing to warn growers of about this rose, and that is, to get your shade over the bud when first you see colour and keep it there until you cut your flower. Constant is mighty particular about getting her frock wet, and in this respect she is akin to Souvenir de Pierre Notting. Now comes, in my opinion, the newest gem of all the

Teas, with manners and customs much like the two preceding varieties, but if I were asked I should put this beauty first. I refer to Mrs. Myles Kennedy. Never—no, not even in Alex. Dickson's stand, who raised this grand Tea—have I seen such flowers as a few plants I put in against a south wall given me. Every one of them as full as full could be, perfect in shape; very few showing divided centres, but all glorious in their clean colour. I had one in Dublin of which I felt very proud—the more is the pity I had not had more! People are, I think, always hasty at forming an opinion of a new variety, and I own I judged Mrs. Myles Kennedy somewhat harshly when first I saw her (not the lady after whom this rose is called, I have seen *her* photo, but the rose), but I got a warning last year from some maiden standards of what this flower was made of. Horrible dicta! Jack Frost killed all my standards, but ere he came I had worked all the buds available, and this year we have had grand perfect flowers. "A glorified Elsie Vardon," the raiser's description is; but surely, Mr. George Dickson, Mrs. Myles Kennedy is worthy of a better description? It will be a long time before another Tea comes from Newtownards to oust Mrs. M. Kennedy. There are grand rods coming from plants here, so I am to have another feast. Will they be as good as the first lot? Care alone will make them so, and if I cautioned you to be careful with your shades with Mme. Constant do not forget to pop one or two over your Kennedy buds at the same time. There must be many readers who are at sea when I talk of shades, so I introduce to you one of the newest variety of shade (and the cheapest) which we poor rosarians can use. It is made of oiled paper, to fold and unfold like a folding cardboard box does. At the end of the season one can fold all away until next they are wanted. They are very light and, as far as I can see, they are admirable. Mind you, I do not want to throw water on the linen shades, which are all so excellent, but for a poor man and lovers of roses I think these "Jeffries" shades are good enough. The great beauty about them is that re-covers only cost 2s. per dozen for the small size; who would begrudge this amount for good flowers? The maker is a good rosarian, and I hope when next you want shades that you will write to Mr. F. J. Jeffries, Rose Grower, 13 Colvin Road, Thornton Heath, London, S.W.



EXPERIMENTS WITH POTATOES.—Last season, at the Harper-Adams Agricultural College, experiments were carried out in order to compare the effect of frost upon greened and ungreened potato tubers. The results obtained showed that the greened tubers could stand without injury three or four degrees of frost, while ungreened exposed to the same temperature were of course badly frosted. Other experiments were conducted at the same college in order to test the comparative merits of immature and mature tubers for "seed" purposes. It was found that potatoes lifted early in August and unripe produced in all cases heavier crops than those obtained from tubers allowed to remain in the drills until fully ripe before harvesting.

Remarkable Effect of Lightning.

MR. FRANK BEDFORD, gardener at Straffan House, Co. Kildare, has kindly sent us a remarkable photograph (here reproduced) showing the destructive effect of lightning which struck a handsome specimen of *Cedrus Deodora* on the 8th of June last, at 3.40 o'clock in the morning. So far as our own knowledge goes there are very few recorded cases where the force exercised was anything like so terrific and the resulting effect so amazingly destructive as in the present case. Usually the damage done is confined

hundredweight twenty or thirty yards away against the branches of neighbouring trees. As Mr. Bedford says, the photograph does not convey a full appreciation of the appearance presented on the morning of the storm, as the photograph could only be taken from one side, and that the least effective one. A neighbouring oak was also "struck," but in this case a strip was merely torn from the trunk from top to bottom.

Hardiness of Petunias.

MRS. FAYLE, of Merlin, Greystones, Co. Wicklow, sends us the following note:—"I have at present in



Photo by

[Robert Lindsay.]

DESTRUCTIVE EFFECT OF LIGHTNING UPON A *CEDRUS DEODORA* IN THE GROUNDS OF STRAFFAN HOUSE, CO. KILDARE.

to the work of separating the cortex from the wood in longitudinal strips, the current following the direction of the fibres—running a straight course in straight fibred trees and a spiral course when the growth is spiral. The wood is either left uninjured or riven in longitudinal fissures. Occasionally the trunk is completely barked.

In the Straffan case the result was not a mere injury, it was a complete and instantaneous destruction of the tree. The central attack was directed against the trunk about fifteen feet from the top, cutting it off, and this, falling vertically with tremendous force, pierced the ground and planted itself beside the riven trunk, firm and upright, just like a young and naturally growing tree. After striking the main stem and cutting off the top the current passed downward, splitting the thick trunk into matchwood, hurling pieces of wood of a

flower in my garden a double pink petunia. It was reared, and had always been, in a heated greenhouse until last summer, when I had it planted against a south wall for decoration for a few months, expecting at the first touch of frost it would perish. Not only did it live through one of the most severe winters that has been known in these parts, but without any protection whatever it did not suffer in the least, the leaves keeping quite fresh and green, although at times covered with snow. The flower buds appeared in the spring, and it has been in bloom for two months; it is a lovely shade of pink. Such things as calceolarias, heliotropes, geraniums (ivy-leaved and zonal), which usually pass through the winters unscathed in this mild locality, have been nearly all killed. Is this experience of the hardiness of the petunia an unusual occurrence? It came as a surprise to me.

Hotbeds.

A HOTBED is used by gardeners as a convenient incubator for raising young plants. It supplies the needful warmth during a period of the year when the natural temperature of the air and soil is too low to induce germination and growth. By providing artificial heat during the seedling period, many weeks are gained in earliness of crop. The cost of making a hotbed is really so trivial in comparison with its advantages that it is surprising amateurs do not make more use of such an easy and interesting means of raising all sorts of flowers and vegetables.

The temperature required to start and maintain germination differs of course with different kinds of plants. It is well known that the seeds of most Alpine plants can germinate at or near the temperature of ice. The growing tips of all plants breathe, that is, they have the power of burning (hence the need of air)—the soluble food in their sap. This slow process of burning in a wet way releases a certain amount of heat, and there are certain Arctic plants the root-tips of whose seedlings can gradually melt the ice so that the roots can penetrate into it along channels they melt out for themselves. But plants of this hardiness are relatively few. The very lowest temperature at which the seeds of ordinary cultivated plants will show signs of germination is somewhere about 5 degrees above frost. But many require a higher minimum—sunflower, for example, demands 8 degrees or 10 degrees centigrade, tobacco about 15 degrees, and cucumber or melon about 18 degrees. These temperatures represent the *lowest*, the best temperature is of course much higher. Speaking generally with respect to our ordinary cultivated plants, the best temperature would be somewhere around 40 degrees centigrade.

The object of a hotbed is to supply the most favourable temperature to germinating seeds and seedlings. The heat is generated by taking advantage of the natural heat given off from fermenting stable manure. For the intelligent management of a hotbed, the user must clearly understand the *why* of fermentation. The heat is really generated in the same way and by the same process as that generated in a market crate closely packed with chickens. It is a

natural heat, given off by living breathing things. The horse droppings used in the making of a hotbed are swarming with uncountable myriads of invisible bacteria. These bacteria feed, grow, and multiply in the organic matter of the dung and give off, all told, a prodigious quantity of heat which is to a large extent held by the solid matter of the manure. They require for their activities a certain amount of moisture and air. By keeping the heap loose you can hasten the fermentation, by keeping it closely packed down you can check the action, because in the latter case you exclude air, and in a poor supply of air breathing (that is burning) can only proceed very slowly indeed. You can therefore regulate the natural temperature of your bed as easily as in an artificially heated greenhouse, where, by regulating the damper you can control the consumption of fuel.

Now as to the making of a hotbed :—

When there is a choice of exposure select south-eastern or southern with some protection on the north or north-west. This protection may consist of buildings, evergreen trees or some constructed wind-break, and at the same time have the bed fully exposed to the sun throughout the day.

The heat, as we have already explained, is supplied by fermenting horse dung which should be collected from the stables every few days and stored where it will keep dry, or it may be taken directly from the stalls. A sufficient quantity must be on hand before the time for building the hotbed. The manure, which should have mixed with it one-third or one-half its quantity of leaves or short straw, is thrown into a well-trodden conical heap. If the materials are dry sprinkle over each layer enough water to thoroughly moisten, but not to sodden, the mass. The heap will soon begin to "smoke," which indicates its heating. When this has been going on three or four days the whole heap must be chopped down and forked over thoroughly and again thrown into a conical heap. A few days later the chopping and forking is repeated and the manure is again piled and will be ready for the hotbed in ten or fifteen days from the time its preparation was begun.

The frame or box can be made by anyone gifted with the use of saw and hammer, and consists of a box 16 or 18 inches high at the north side and 12 inches on the south, the ends conforming to the pitch. The width is 6 feet from outside to outside, and may be of any length desired to accommodate any number of sash. At intervals of 3 feet 2-inch strips should be let into sides flush with the upper edges for the sash to rest on and to prevent the sides from spreading. These strips are 6 feet long and extend across the frame. Remove 20 or 30 inches of earth from within the frame, filling this space with the manure well tramped in. For several days immediately after the manure is put in it should

be covered with about an inch of soil and the sash put on. The temperature will rise rapidly, and in a day or two will reach 100 degrees or more. When this high temperature has subsided to about 90 degrees the soil covering the manure must be increased to 4 or 6 inches.

The soil should be of even texture and very fertile. The hotbed is now ready for the seed, which are planted in rows from 2 to 4 inches apart, and running across the hotbed, or north and south. The temperature in the bed must be watched closely and not allowed to run too high or above 95 degrees. About 80 or 85 degrees is a good temperature to maintain, and is regulated by raising the upper ends of the sash. The reason for aiming at so high a temperature is that a higher heat is required to start the seeds than is required afterwards by the seedlings. When the germination period is past the temperature of the bed will be much lower. Except in extreme cold weather fresh air should be daily admitted into the bed, and at no time should the plants suffer from either too much or too little water. In cold weather the water should be heated to about the temperature of the hotbed, or it will injure the plants. A thermometer should be kept in the bed that

the temperature may be accurately regulated, as either extreme is harmful. On warm, cloudless days it will frequently be necessary to remove every other sash.

If the soil upon which the hotbed is to be built is not well drained or is liable to become saturated in wet weather, no excavation should be made, but the manure spread on the surface of the earth in a flat top heap a

foot wider and longer than the frame. The frame is simply set on top of this heap, the soil put in and earth heaped against the sides and ends and well packed down to prevent the escape of heat.

An abundance of leaves or straw should be kept convenient that the hotbeds may be covered in very cold weather.

By making a hotbed in the way described, and taking care to control its action in an intelligent manner, a great number of nice thrifty plants can be raised with the greatest ease. It is interesting work, and the results repay handsomely for all the trouble. No garden, however modest in pretensions, should be without this means of raising an early stock of useful, decorative, or culinary plants.

Weeping Roses.

WEeping roses are always an attractive feature in the garden. They are perhaps best used as distinctive features in a design to mark particular points, as, for example, the corners and centre of a formally planned or pleasure

garden, but they are equally effective planted at regular intervals along a broad walk or avenue. They are obtained by budding on tall standards, using such varieties as *Winchuria*, *Ayrshire* or *Polyanthus* that are naturally of a rambling habit. The only drawback is that the period of flowering is so short. At the last Temple show some very handsome specimens were exhibited.



A SPECIMEN COLEUS.

Coleus Cordelia, raised by Mr. T. Stevenson, and introduced by Messrs. W. Cutbush & Son, Highgate.

[Specimen illustration from Curtis's "Book of the Flower Show," reviewed in last month's issue, page 105, and here reproduced through the courtesy of the publisher, Mr. John Lane.]

Fruit Crop and Fruit Crop Prospects (Ireland), 1910

Note.—The date of this Report may be taken as the 12th July. In order to secure as much uniformity as possible in the Returns a scale of descriptive terms was agreed upon, viz.:—Very good, good, average, below average, bad. The names of County Horticultural Instructors are starred (*).

County and Locality	Apples	Pears	Plums	Cherries	Gooseberries	Currants	Raspberries	Strawberries	Names of Correspondents
ULSTER.									
<i>Anagh—County</i>	Average	Average	Good	Good	Average	Average	Average	Good	J. HAGAN *
<i>Enniskillen—County</i>	Below av.	Below av.	Good	Good	Average	Below av.	Good	Average	J. D. ROBINSON
<i>Loughlin—County</i>	Good	Bad	Good	Good	Average	Below av.	Good	Average	J. W. DUNLOP
<i>Armagh—County</i>	Below av.	Bad	Good	Good	Average	Average	Very good	Average	REV. W. MARTIN *
<i>Mid—County</i>	Average	Below av.	Average	—	Average	Very good	Very good	Very good	HERBERT DEW *
<i>North—County</i>	Average	Average	Average	—	Average	Average	Good	Good	REV. W. MARTIN *
<i>Caran—County</i>	Below av.	Average	Below av.	Below av.	Very good	Average	Average	Very good	LUCY DOUGLAS *
<i>Farnham—County</i>	Below av.	Below av.	Below av.	Good	Good	Good	Very good	Good	WM. BERRY
<i>Derry—County</i>	Average	Below av.	Below av.	Below av.	Very good	Very good	Very good	Good	F. W. WARD *
<i>Eglinton—County</i>	Below av.	Bad	Bad	Good	Very good	Good	Average	Good	L. B. ARCHBOLD
<i>Thornhill—County</i>	Below av.	Average	River's good others below	Good	Very good	Good	Very good	Very good	R. STEWART
<i>Moneymore—County</i>	Average	Bad	Below av.	Good	Very good	Good	Very good	Good	G. FRASER
<i>Down—County</i>	Below av.	Average	Below av.	Good	Good	Good	Good	Good	T. SCOTT *
<i>Gifford—County</i>	Average	Good	Very good	Good	Very good	Very good	Very good	Below av.	J. LYNAS
<i>Orangefield—County</i>	Very good	Below av.	Below av.	Bad	Very good	Average	Below av.	Very good	DAVID W. BAILLIE
<i>Droghda—County</i>	Bad	Average	Average	Bad	Below av.	Average	Average	Good	P. J. O'CARROLL *
<i>Cardonagh—County</i>	Bad	Bad	Below av.	Average	Good	Average	Good	Good	REV. R. MORRISON
<i>Fermagh—County</i>	Below av.	Below av.	Below av.	Bad	Good	Below av.	Good	Below av.	P. BROOK *
<i>Crom Castle—County</i>	Below av.	Bad	Good	Good	Good	Below av.	Good	Very good	A. KEID
<i>Florencecourt—County</i>	Below av.	Very good	Very good	Very good	Very good	Very good	Good	Very good	W. SUTHERLAND
<i>Monaghan—County</i>	Good	Below av.	Average	Good	Very good	Very good	Good	Good	J. G. TONAR *
<i>Dartry Castle—County</i>	Below av.	Below av.	Good	Average	Very good	Good	Average	Good	J. HEBURN
<i>Town—County</i>	Very good	Bad	Very good	Good	Very good	Good	Good	—	RICH. GRAHAM
<i>Trillick—County</i>	Average	Below av.	Good	Good	Below av.	Average	Good	Below av.	S. MAGILL *
<i>Baronscourt—County</i>	Below av.	Average	Good	Average	Very good	Very good	Good	Good	—
<i>Clogher—County</i>	Good	—	Below av.	Bad	Very good	Very good	Very good	Good	DUNCAN McLAREN
MUNSTER.									
<i>Cork—East—County</i>	Good	Bad	Very good	Below av.	Average	Good	Good	Good	J. RLEMENS *
<i>West—County</i>	Very good	Very good	Very good	Good	Good	Very good	Good	Average	J. BRACKEN *
<i>Mid—County</i>	Average	Average	Good	Average	Average	Very good	Very good	Very good	J. DEARSALEY
<i>Michelstown—County</i>	Average	Below av.	Good	Average	Average	Good	Very good	Very good	J. S. LINCOLN
<i>Clonmel—County</i>	Good	Bad	Below av.	Below av.	Good	Good	Very good	Very good	A. PARKER *
<i>Carrigroh—County</i>	Average	Bad	Below av.	Average	Good	Good	Good	Good	J. GREENAN *
<i>Newmarket—County</i>	Average	Bad	Bad	—	Good	Average	Good	Good	P. QUEALEY *
<i>Kerry—County</i>	Bad	Average	Good	Bad	Good	Good	Very good	Very good	W. EARLES *
<i>Killarney House—County</i>	Below av.	Below av.	Good	Average	Very good	Very good	Very good	Very good	A. J. ELGAR
<i>Waterford—County</i>	Good	Average	Good	Good	Below av.	Very good	Average	Average	F. HUDSON *
<i>Currane—County</i>	Below av.	Below av.	Below av.	Below av.	Below av.	Very good	Very good	Very good	D. CROMBIE
<i>Dromana—County</i>	Good	Very good	Very good	Very good	Very good	Very good	Very good	Very good	GEO. S. MACDONALD
<i>Dungarvan—County</i>	Good	Good	Bad	Good	Very good	Good	Very good	Very good	R. McCURATH
<i>Tipperary—North—County</i>	Good	Below av.	Bad	Good	Average	Good	Very good	Very good	J. C. CAROLAN *
<i>South—County</i>	Below av.	Below av.	Below av.	Average	Below av.	Average	Good	Very good	J. RUTHERFORD *
<i>Waterford—County</i>	Average	Good	Average	Very good	Below av.	Very good	Very good	Good	ED. J. ROGERS

LEINSTER.

<i>Carlow</i> —County . . .	Below av.	Average	Good	Very good	Very good	J. MACKENZIE *
<i>Borris</i> . . .	Below av.	Average	Below av.	Good	Very good	S. COLE
<i>Dublin</i> —Blackrock . .	Below av.	Bad	Good	Very good	Very good	S. DAVIS
<i>Clonsilla</i> . . .	Below av.	Bad	—	Good	Good	JAMES DENT
<i>Cahir</i> . . .	Below av.	Average	Average	Average	Average	W. USHER
<i>Phoenix Park</i> . . .	Below av.	Average	Bad	Very good	Very good	DAVID WATT *
<i>Kildare</i> —County . . .	Below av.	Bad	Average	Very good	Very good	W. TYNDALL *
<i>Monasterevan</i> . . .	Average	Good	Average	Good	Very good	C. PILGRIM
<i>Firmount</i> . . .	Below av.	Good	Below av.	Very good	Good	B. TAYLOR
<i>Kilkenny</i> —County . .	Below av.	Good	Good	Average	Average	T. REA *
<i>Woodstock</i> . . .	Below av.	Good	Bad	Very good	Good	W.M. LEATH
<i>Piltown</i> . . .	Good	Very good	—	Average	Good	P. LYNCH
<i>Mt. Juliet</i> . . .	Good	Good	Average	Very good	Good	A. DRYDEN
<i>Bessborough</i> . . .	Average	Good	Average	Very good	Very good	F. E. TOMALIN
<i>Castle Garden</i> . . .	Good	Bad	Average	Good	Very good	G. SUTTON
<i>Gowran Castle</i> . . .	Very good	Average	Good	Very good	Very good	G. ROCHE
<i>Thomastown</i> . . .	Below av.	Below av.	Average	Good	Average	J. STARK *
<i>King's County</i> — . . .	Average	Below av.	Bad	Average	Good	E. CLARK *
<i>Tullamore</i> . . .	Average	Below av.	Average	Good	Good	W. ROBERTS *
<i>Longford</i> —County . .	Good	Very good	Average	Very good	Very good	W. JOHNSTON *
<i>Louth</i> —County . . .	Below av.	Bad	Average	Good	Very good	J. HARNEY *
<i>Meath</i> —County . . .	Below av.	Average	Good	Very good	Good	J. B. CLARK *
<i>Rathfriland</i> . . .	Bad	Below av.	Average	Average	Average	M. MCKEOWN
<i>Julianstown</i> . . .	Below av.	Average	Good	Good	Good	J. B. CLARK
<i>Kilken Castle</i> . . .	Below av.	Bad	Good	Average	Very good	P. MAHON
<i>Dunsany Castle</i> . . .	Average	Good	Good	Very good	Very good	J. B. POW
<i>Queen's County</i> — . .	Good	Good	Good	Very good	Very good	H. H. COOK
<i>Heywood Gardens</i> . .	Average	Average	Below av.	Very good	Good	P. J. CALLAN *
<i>Westmeath</i> —County .	Average	Good	Average	Good	Average	G. ROGIE
<i>Pakenham Hall</i> . . .	Below av.	Good	Average	Good	Good	W. HILLOCK *
<i>Wexford</i> —County . . .	Average	Average	Average	Very good	Very good	E. SLAVIN
<i>Johnstown Castle</i> . .	Very good	Very good	None	Very good	Very good	J. MC CARTHY *
<i>Enniscommity</i> . . .	Good	Average	Good	Good	Good	JOHN MOORE
<i>Wexford Town</i> . . .	Good	Average	Average	Good	Very good	P. CULLEN *
<i>Wicklow</i> —County . . .	Average	Below av.	Good	Below av.	Very good	D. BROUGH
<i>Collatin</i> . . .	Average	Good	Average	Very good	Very good	J. SHIVAS
<i>Shelton Abbey</i> . . .	Bad	Good	Good	Very good	Bad	W.M. OWEN
<i>Enniskerry</i> . . .	Below av.	Good	Bad	Very good	Good	

CONNAUGHT.

<i>Galway</i> —County . . .	Average	Very good	Average	Average	Good	P. J. MCNICHOLLAS *
<i>Woodlawn</i> . . .	Good	Below av.	Good	Very good	Below av.	J. LARRIE
<i>Cong.</i> . . .	Below av.	Bad	Average	Very good	Good	P. D. REDD
<i>Mt. Bellew</i> . . .	Good	Bad	Below av.	Good	Good	P. QUEALY
<i>Athenny</i> . . .	Good	Very good	Good	Very good	Very good	H. DAVIDSON
<i>Gort</i> . . .	Good	Average	Average	Good	Average	HENRY HUME
<i>Mayo</i> —County . . .	Very good	Average	Below av.	Good	Very good	M. JORDAN *
<i>Roscommon</i> —County	Average	Below av.	Average	Good	Very good	E. H. BOWERS *
<i>Mt. Talbot</i> . . .	Very good	Good	Good	Very good	Very good	THOS. FARLEY
<i>Sligo</i> —County . . .	Very good	Average	Very good	Good	Good	J. J. CURLER *
<i>Lissadell</i> . . .	Good	Bad	Average	Good	Bad	J. LANGSTER
<i>Collooney</i> . . .	Average	Below av.	Good	Very good	Average	H. COUSINS

Fruit Crop, 1910.

WE are afraid the prospects of Irish fruit growers are not very promising this year. The very heavy crop of apples last year on both young and old trees, many of which were not thinned, told heavily on the quantity of blossom borne this year. Old trees, especially in grass orchards, certainly did not flower so freely as last year. This cannot, however, be said of young, vigorous trees, as they formed in most cases a perfect mass of flowers.

The severe weather of last October interfered in many cases with the proper ripening of the wood, with the result that much injury was done by the early frosts. Many of the fruit buds, too, not being properly ripened up, suffered very much, and produced quantities of very weak flowers which failed to set.

Three weeks of good weather at the end of March and in early April started the buds, and then we had very cold nights with much rain and some hail. This, retarding the growth, gave insects considerable headway in their attacks on flower and young leaf. The usual late spring frosts, not being severe this year, did very little damage to the fruit blossom, and gave expectation of a much better set of large fruit than subsequently appeared. The flowering period was late last year, but this year it was at least a week, and in some cases a fortnight, later than usual. The continual very cold rain, hail, and wind at the flowering period prevented many of the flowers setting fruit, while the lengthened flowering period also enabled various insects, such as the apple-sucker and the caterpillar of the winter moth, to do great damage to the flower trusses throughout the prolonged critical time of fertilisation.

The crop of large fruit in general is below the average, and nothing like as good as last year. The fruits, however, appear as if they will be a good sample, are swelling up rapidly, and there should, at all events, be some good exhibition fruit, as few trees are bearing a very heavy crop. As a general rule young trees are bearing better than old ones, and bush fruit, on the whole, have apparently done very well.

APPLES are in general either an average or below average crop. There are few cases of a good crop, and this is chiefly on trees in orchards which had a light crop last year. Trees which were allowed to over-crop themselves last year are bearing very little, and in many instances no fruit at all. Bramleys are bearing an average crop in the North, both young and old trees. Lane's, Derby, Grenadier, White Transparent, Early Victoria, and Bismarck are also bearing fairly well. The dessert varieties will, however, be a light crop in general.

PEARS are below the average in general, and, except on walls, there will be a light crop. It is nothing like so good as last year, and in very few gardens is there a good crop. Pears are not much grown commercially. They are planted chiefly in walled-in gardens for home use.

PLUMS are poor in general. They must have suffered from the cold, wet weather, as there was a good show

of flowers, and they were not so much affected with insects as in past years. Young trees of Victoria and River's Early Prolific from four to ten years planted appear to be bearing heavy crops. There is a fair crop on wall-trained trees.

CHERRIES were an irregular crop this year. In most gardens, where sheltered, they were well up to the average, but where grown for commercial purposes in Derry and Wicklow, and at the "Strawberry Beds" districts near Dublin, the crop has been below the average. In Dublin the black fly played great havoc with this crop.

GOOSEBERRIES are nothing like the crop they were last year, few of the market growers having a good crop. Whinham's Industry seems to be bearing the best this year, and good prices are at present being obtained for them, ripe. Owing to the prolonged hard winter, birds played havoc with the buds, and almost stripped some of the bushes. This was most noticeable in Wexford, Waterford, Kilkenny and Cork counties. It was not so bad in Meath and the North. A good many bushes have had to be grubbed up and burned owing to outbreaks of American gooseberry mildew.

CURRENTS in general are a good crop, and the fruit is of good quality. Prices have had a severe drop during the last few days here. This ought not to be, however, as the English crop is a small one. They appear to have withstood the cold weather well, and suffered very little from the attacks of green fly. A good many bushes have been destroyed because of the mite. Much more pruning is being done to black currant bushes than formerly, with the result that more young wood is formed and better fruit borne.

RASPBERRIES in both private gardens and commercial plantations are a good crop, and the fruit is of good quality. The prices obtained for the sale of the fruit, however, are not as good as they might be. A few of the plantations suffered, but in general the canes came through the winter without suffering very much. A comparatively new variety, Bath's Perfection, which is a strong grower, appears to be doing well on heavy soils and is well worth a trial where some other varieties are not doing well.

STRAWBERRIES are a good crop, and almost everywhere are better than last year. In the North, especially, many of the earliest and best fruit suffered from the very wet weather just as they were ripening, and it was a blessing to the strawberry growers here that the weather took up at the time it did, as a few more wet days would have spread mildew over the whole plantations. The berries were later in ripening this season, and many of the best fruits came in just at the same time as the imported surplus from England, thus causing a glut in the market. Later on good Irish strawberries were selling very well, and it is a query if good later are not now more profitable than early or mid-season berries to cultivate.

FUNGI.—The most troublesome fungi are apple canker, scab and American gooseberry mildew. Apple scab is spreading very much, and doing more damage perhaps to the apple crop than any other pest. No definite remedy has as yet been discovered which will eradicate it without serious injury to the trees. Experiments are at present in progress in this country

dealing with this and American gooseberry mildew, but the results will not be obtainable until the end of the season.

Apple mildew has not been so troublesome this year as it generally is.

Silver leaf on plums is killing many trees on large plantations, and though the fungus causing it has been discovered no definite remedy is as yet available, though we understand that "plugging" with sulphate of iron is doing some good where it has been tried.

Strawberry mildew did much damage to the early fruit, but the spread of the disease was much checked by the climatic conditions, the warm weather just coming in the nick of time.

INSECT PESTS have not been so troublesome as last year. Growers are beginning to realise the damage done by these pests, and now take more precaution as regards outbreaks immediately they appear. Various spraying materials are used to check the spread of the pests.

It is only the careless grower who does not examine his trees from time to time to find out if they need spraying or not who now suffers to any extent from insects. Almost any of the insects which attack orchards can now be successfully combated if the trees are properly sprayed at the right time.

Green and black fly, except on damsons, gooseberries and cherries, have not been so bad as last year. In the Dublin district cherries have suffered very much from black fly attack, many of the large trees still showing the effects.

American blight is not so prevalent as last year, as many growers are doing their best to eradicate it, and with success.

Winter moth continues to do much damage. Grease-banding and using arsenical sprays in the early spring keep it, however, well in check. All apple growers should grease-band their trees annually in October. Leaf-rolling moths continue to do much damage; sawfly caterpillars, however, were not very troublesome on currants or on gooseberries.

Apple-sucker is one of the apple growers worst insect enemies, and is a difficult one to eradicate. Spraying with tobacco washes or with paraffin emulsion in the early spring are the only remedies that appear to have any effect on this most injurious insect. It is present in most counties in Ireland, and is very bad in many.

Codlin moth is on the increase, and it behoves growers to have their trees sprayed with arsenate of lead in the early spring and to examine the fruits in June and July. If any infected fruits are found, either on the trees or on the ground, they should be gathered and given to the pigs.

W. S. IRVING.

[NOTE.—The Editor of IRISH GARDENING wishes to express his grateful thanks to each of the numerous correspondents throughout Ireland who took such pains to supply him with the first-hand information from which the facts given in the schedule pages were extracted and upon which the above Report dealing generally with the subject was based.]

One-Shift System of Potting.

By K. MACLEOD BEATON.

THIS so-called system is giving a plant in a pot one large shift instead of frequent small ones.

Thus, instead of moving a plant successively from a 3 in. to a 5 in. pot; thence to 7 in. or 8 in.; and thence again to a 10 in. or a 12 in. allowing the roots to become pot-bound, or merely to reach there, according as flowering or growing is the object aimed at, the plant is moved at once from a 3, 4, 5 in. pot, into one of 8, 12, or 14 in. in diameter.

It is seldom that a seedling or a cutting in a small pot is at once moved into a large pot; for during its very small state it can be more safely and easily attended to in a small pot. The one-shift system requires ample room for its adoption. Striking individual rather than mere general results are its characteristics; and therefore, where a constant show of bloom and variety are desired in a small space it should only be sparingly adopted.

The principal object aimed at is rapidity of growth, and thus obtaining a beautiful specimen in a much shorter period than could easily be realised by the succession shift system.

By the one-shift system we obtain a vigorous growth; but yet, from being in a pot, luxuriance may be so controlled as not to interfere with the flowering. In fact, with the extra care and trouble involved, we obtain the advantage without the disadvantages of the planting-out system. For the one-shift system, where a fine specimen is desired, a young plant must be commenced with that has never had its roots pot-bound. Such a plant will soon overtake one four times its size, but which has several times densely filled its pot with roots.

In common with the other modes of potting, the pots must (or should) be sound. Thoroughly clean inside and outside. Good drainage (always essential) must here form a chief element of success. This cannot be too particularly attended to. Green moss over the drainage is a good thing for preventing the soil being washed into and choking it up. The soil, whatever may be, its constituents should be rough and lumpy; should much of the compost be in larger lumps than a hen's egg, the plant will not at all be greatly injured for the first season or more, nor yet as long as the roots are contented to crawl around the lumps, but when they have reached the sides of the pots, and necessity leads them to penetrate the large pieces, a declining appearance is apt to present itself. Hence, the complaints against the system that, though plants grow vigorously at first, they were short-lived. A plant never thrives well when the surface of the ball is sunk several inches below the rim of the pot; and there is something uncouth in observing the centre of the ball sticking up in the centre of the pot like a mole-hill. Watering is the most important of all points, and where it cannot be properly attended to the one-shift system should not be attempted, for some time you must merely water as far as the roots extend. The unappropriated soil must not be soaked, or it will become sour and unhealthy for the roots even before they get to it. No regular

routine, dash, or dribble, from the water-pot will do for the one-shift system.

For some time after potting the plant should have from 5 to 10 more heat than they would otherwise require, and a close atmosphere until fresh growth is proceeding freely. A dash from the syringe frequently in hot days, will be of great importance. Every incitement to growth must thus be given; and when that has been accomplished, then air must be freely imparted, drier atmosphere maintained, that the fresh wood so freely made may be thoroughly matured.

In the case of all lasting plants intended to be our companions for years, potting should take place from early summer up to the present, in order that growth may be quickly made, and maturation of the wood be effected before the short days of winter come, when, in the generality of cases the low temperature of winter will give them the *rest* they require before breaking, and flowering vigorously and profusely the following season.

Storing Fruit and Roots.

It will be readily agreed that it is a matter of extreme importance to know how to properly store the harvest of surplus fruit and roots in order to meet demands during the hungry months that succeed the months of sunshine and plenty. Most gardeners recognise this and act upon it, but there are many owners of gardens that, so far at least as fruit are concerned, entirely fail to get the full benefit from the produce of the orchard. A correspondent, writing in one of the numbers of the monthly circular, issued by the Women's Agricultural and Horticultural Union, gives some useful hints as to the construction of fruit rooms.

A fruit room, she says, should be dark, dry, and cool. Evenness of temperature should be secured in every possible way; if specially built, wood is the best material, being non-conducting; but neither walls, shelves, nor floors should be of deal or any resinous kind of wood. The floor should be raised above the ground level to ensure dryness. Shelves should be of laths, not solid, for preference. If there is a greater quantity of fruit to store than can be accommodated on the wall-shelves, stands may be used in the centre; these can be obtained with iron frames (lightly made) with fitted removable shelves of laths. The advantage of these is that you can not only store many more pears or apples on them than by covering the floor space after filling the side shelves, but you can move around them easily and without disturbing the fruit to

see into its condition. No unnecessary handling should be permitted. The kinds that will be first ready for using should be placed in such position that they are easily got at without moving the others. Earlier and soft pears must only be in one layer; harder kinds in two (with paper or layer of clean dry fern between); late apples may lie in several layers.

The room should be quite clean; nothing kept in it but fruit. In times of frost, if covering is necessary, never use hay or straw—the smell will be taken up by the fruit.

All this of course involves time, trouble, and—in the first instance—expense. Those who cannot afford to fit up a fruit-room may be able to dig out a store cave, in some dry bank, and put up a strong, thick

door. Lastly, do not store any but good sound specimens; discard all misshapen, speckled or damaged fruits; these can be put to some immediate use—tarts, jam, jelly; or, at worst, can go to the pigs. It is very wisely pointed out in the *Agricultural Economist* that many growers of good apples will not be at the trouble of storing them. Their only idea seems to be to market them as soon as possible, regardless of kind or season. Thus they get a poor price for fruit that would keep till March, when it would command a high price; not only do they lose themselves by this want of forethought, but they keep down the market for growers of earlier sorts. It is this kind of thing which has given the foreigner his opportunity, and he has not failed to take advantage of it.

Now, a few final words as to roots. Beets are the first to be raised and stored; they will not stand the same amount of cold as carrots. Cut the tops a few inches within the crown, not closer, or the roots will bleed and spoil. Place in layers with a thin coating of soil between each; put the thin end of the roots inwards, the crown outwards. Carrots can be stored in the same way, but need not be got up so soon; parsnips should be left in the ground as long as possible. If a sudden severe frost comes on, litter may be spread over the ground. Needless to say, the roots should be dry when stored, and the soil used must not be wet. On the other hand, it must not be dust dry, or the roots will shrivel. If, for any reason, it should be likely that frost has touched your stores, the only thing is to uncover and sort out any damaged roots or they will cause the sound ones to rot.

Jerusalem artichokes, a winter vegetable which is, I think, somewhat undervalued, may be taken up; if the entire lot of tubers were lifted, stored, and the small ones cut and planted apart, after the manner of potatoes, much better results would be obtained than is usually the case.



"THUMPING" BEES OFF A COMB.

(From "The Practical Bee Guide," from a photograph by the Author.)



The Reader.

Garden Making.

IN a handsome, square volume, embellished with 150 thoroughly practical illustrations, Mr. W. S. Rogers has provided all garden-lovers with a standard text-book on the absorbing subject of planning and planting a garden.* The author is not only a gardener but an artist, and his remarks upon the pictorial side of garden-making are illuminating, sound, and to the point. He tells us when planting for beauty to use the colours of growing plants just in the same way as the painter makes use of pigments in the creations of his brush. We must, in making a garden, strive to produce a picture, natural, harmonious and pleasing. After these preliminaries the reader is at once taken in hand and given instruction in the rudiments underlying the art, such as the determining factors to be considered (great stress being laid on aspect) and the fundamental elements in making a garden plan. Following this are chapters on details, including beds and borders, walks and drives, lawns, rock gardens, fences and hedges, the treatment of sloping ground, and kindred subjects, with an excellent chapter on planting. There is nothing apparently left out; even particulars concerning edgings and the best class of material to use under given conditions are included in this compendium of garden-making.

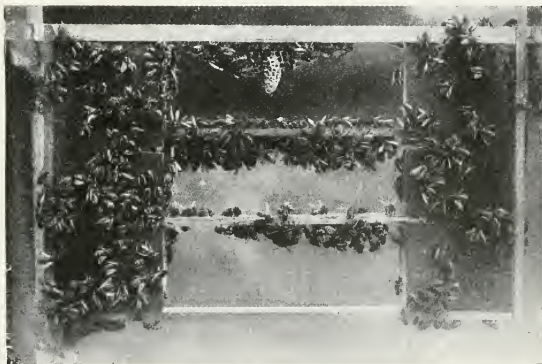
There are quite a large number of plans carefully drawn to scale and dealing with all sorts and conditions of gardens. In every case aspect is taken into account, and by the use of different tones of shading the shadows and partial shadows cast by the dwelling-house and walls in the case of smaller gardens

are graphically shown on the drawings. Several of the plans are those of actual gardens presumably laid out by the author. Attention is rightly drawn to the use of suitable subjects for particular sites, and lists are given of plants that thrive under different conditions, such as in full sunshine, in deep or partial shade, on dry banks or among rocks, in damp ground and in water. A large amount of valuable matter useful for reference is given in the appendices. Long lists of plants suitable for all sorts of situations in the garden and pleasure grounds are given, together with such information concerning them as habit, colour, height, habitat, &c. It is a work that many owners of gardens will be glad to consult, and it should certainly find a place in every country house library.

A Book for Beekeepers.

BEEKEEPING has always been closely associated with gardening. The beehive is really an essential part of the garden, just as the visit of the bee is essential to the well-being of the flower. It is, therefore, not for the honey alone that bees are so useful, but because of their work in distributing pollen, and thus securing fertilisation and the speedy setting of fruit. This is why bees are so necessary in orchards, and why the attention of all earnest gardeners should be given to learning the art of beekeeping. Fortunately a good deal of attention is given to the study of bees and their management in this country, and we know as a fact that quite a large number of our readers are interested in the practical side of beekeeping and all the collateral branches of this interesting and modestly profitable pursuit. To all

such, and to others who have a desire to make a beginning in beekeeping, we can confidently recommend this thoroughly practical and reliable little guide,* prepared by the Editor of the *Irish Bee Journal*. The second edition, just published, is revised throughout and brought well up to date, with several new chapters and additional illustrations. The book is conveniently divided into three sections. The first deals with the natural history of the bee, the second devotes itself to hives



QUEEN REARING.

Queen cell on a prepared frame (seen suspended from middle of top bar).

[From "The Practical Bee Guide," from a photograph by the Author.]

and appliances used in beekeeping, while the last gives very clear and precise instructions as to the management of the bee in health and disease. A final chapter is added on exhibiting and judging bee products.

* "Garden-Planning." By W. S. Rogers. 20s. net. London: T. Fisher Unwin.

* "The Practical Bee Guide: a Manual of Modern Beekeeping." By the Rev. J. G. Digges. 2s. Eason & Sons, Ltd., Dublin.



The Month's Work

AUGUST

Flower Garden and Pleasure Grounds.

By E. KNOWLTON, F.R.H.S.

CUTTINGS.—Cutting time has come round again, and the bedding geranium has to be called on to provide stock for another season. For six months out of the twelve has this mainstay of the bedders to be coddled and catered for under glass, and but little more than half the remainder can it bear the breath of heaven with impunity, but we are not going to run it down. Oh! no, for whilst we have the bedding will the geranium, like the poor, be with us; and to make the best of it and avoid unnecessary trouble cuttings should go in by the middle of the month, the sooner now, in fact, the better, whether in pots or boxes, or, for the matter of that, dibbled into a border, provided the cuttings are fully exposed to the sunshine and everything else—no coddling, and every properly prepared twelve cuttings will give a dozen plants. Later than the middle of the month it is another story, and to leave the operation till St. Partridge's Day quite so, so in the words of the immortal Jarley, "be in time," or results will at least be qualified by George's opinion of the Jarley pie, "middlin'."

TRIMMINGS.—Fortunately the full fortnight of fine weather which July vouchsafed to us has minimised the hay fever, which, if it has no business in garden work, cannot, like King Charles' head in the Dick dissertations, be kept out of it, and the nipping, pinching, trimming and tidying, so essential to satisfaction in the formal garden, can be done in the unobtrusive manner which leaves the powers that be a part of the day at least in undisturbed enjoyment of it. Thoughts crop up anent a Kentish banker's flower garden which each season was brought to and maintained as long as possible in perfection—perfection writ large with a big P. Still, that banker of Beckenham was not happy because, forsooth, he or his friends could never enjoy it by reason of shears, shirt-sleeves, baskets, barrows and other impedimenta being eternally in evidence, till at last in his wrath he fixed up a rule as firmly as the laws of the Medes and the Persians, that no workman in shirt-sleeves, or anything else, should ever be seen on the flower garden after two p.m.

SOVINGS.—Saponaria, silene and forget-me-not sown, the first week in the month are invaluable for the spring garden under the bedding system. The first named,

truly, is a somewhat miffy subject in uncongenial localities, and when planted *en masse* as a carpeting for bulbous subjects or otherwise, is apt to get gappy, yet we have seen the lovely saponaria Scarlet

Queen giving such glorious spring (late spring) effect on the flower garden as to out-rival aught else of its kind or colour. The old silene *Pendula* in soft pink is less subject to this dying out weakness, although we have found the variety *Compacta* less amiable. However, the old *Pendula* is of that nature that should a few gaps occur the free growths of its flowering stems make up for deficiencies, the whole, at its best, forming a perfect pink cushion should the bed be large enough to let it have its fling. Forget-me-not *Royal Blue* is not likely to be forgotten by those who have seen masses of this fine variety true. Another spring bedder for present sowing is worth mentioning—viz., *Limnantes grandiflora*, of dwarf habit and profuse flowering, the comparatively large, yellow flowers shading off at the margin to white. The old *Virginian* stock is, too, very pretty as an early spring flower, where it can be sown permanently at this season; for the others mentioned, thin sowing on a bit of clean ground avoids preliminary transplanting.

REFLECTIONS.—There has been a great cry out at the manner in which hardy flowers have behaved after the spell of sunshine following the cool, wet June. They rushed in and they have rushed out, but where all vacancies had been occupied by temporary subjects, they are not missed, their place being taken by the odds and ends which are now appreciated. Single dahlias, Cactus dahlias, with clumps of sweet peas on the larger scale; heliotropes and other bedders, with sweet-scented tobaccos and gay but nasty smelling French and African marigolds, all compensate for the loss of the hereditary occupants, many of which have, of course, yet to give us of their autumnal beauty, and notably so, the beautiful groundsel, *Senecio pulcher*, good clumps of which we expect to be particularly gay later on, for it has enjoyed its early summer soaking, but it is a late flower. Soon, too, we shall have the dense, rosy-crimson heads of *Sedum spectabile*, telling us that autumn is really with us, and over the cushion-like heads butterflies, blowflies, and every fly in the garden will hover, it being the plant beloved of the insect tribe. The gay gladioli is pushing spikes apace, a stake to each spike being imperative. Why, we wonder, are not the earlier summer-flowering gladioli availed of, those we mean of the *Insignis* type, which formed a notable feature of the last Dublin flower show.

OUR CLIMATE.—As we write a party of Essex farmers are touring through Ireland, and one member of the party is the Instructor of Horticulture to the Essex County Council. He is particularly struck with the freshness, lush, vigour and greenness of our vegetation, both wild and cultivated, everywhere in evidence throughout the country. He is greatly impressed with the horticultural possibilities of the "ould countrie," and charmed with the rich tones in the colouration of our flowers.

The Fruit Grounds.

By A. BARKER, Carrigoran, Newmarket-on-Fergus,
Co. Clare.

THE training and pruning of all kinds of fruit trees on walls needs continued attention. Peaches should have the young shoots regularly tied in, and the trees will be much benefited by copious supplies of water at the roots while the fruits are swelling, with plenty of syringing overhead, and especially so if there is any sign of red spider present. Heavy syringing with water after the sun is off the trees is both a preventive and a sure remedy against red spider; if as much soot water as will just discolour the syringing water is added it makes the check to red spider quicker and more effective.

Morello cherries should have about a third of their young shoots tied or nailed down and the remainder cut right out, as it is on these young shoots the fruit is produced and not on spurs as with sweet cherries.

In the case of trained trees of pears, plums, dessert cherries, and apples on walls or espaliers, continue to train all shoots needed to extend the trees; leading shoots will now have made sufficient growth and the points may be pinched out, to check further growth. If the breastwood on such trees has not already been shortened do not delay any longer in getting it done, as apart from the benefit to the trees generally the cutting away of the young growths renders the trees much more pleasing in appearance and takes away the rough uncared-for look of trees unpruned or untrained. Keep all secondary growth on previously pruned trees closely pinched back. Cordon trees, whether on walls or on wires in the open grounds, may be similarly treated.

The fruits on the five mentioned trees will now be much benefited by plentiful supplies of water, unless the rainfall should be sufficient to meet their needs (except in case of such early varieties as are just approaching maturity), weak manure water if available, or failing this a dressing of any approved fertiliser raked in to the ground previous to watering; occasional washings with the garden engine or hose pipe will also assist very materially in keeping the trees clean and the fruit swelling away freely. Similar waterings will also be of great benefit to bush and pyramid trees. Bush and pyramid trees may now have the leading shoots stopped, and if the side shoots have not been cut back, as previously advised, make an effort to get this done at once, and especially as the pressure of gathering, &c., of small fruits is almost over. Give all attention possible to the larger fruits so that they may still gain all the advantage possible from the summer pruning. Fully grown or large old orchard trees may be left alone until after the fruit is gathered.

If woolly aphid has made any headway it should be taken in hand and persistently destroyed, when and wherever it appears. A very handy way of treating this aphid on small trees, or such as can be reached from the ground, is to go around and give every bunch of the aphid a dressing of methylated spirits. Obtain some receptacle to use the spirits from; such a thing as a small jam-pot with a piece of copper wire tied round

and over to form a handle for carrying with, and a small paint brush, or a few bristles tied round the end of a stick, will do quite well. Keep the brush continually moistened with spirits, and touch up all the aphid with sufficient spirit to destroy it. Do not use a large brush, as this is wasteful of the spirits and liable to drop too much over the foliage and fruits. For larger trees syringe with paraffin oil and water at the rate of a wineglass of paraffin to one gallon of water. Keep this mixture thoroughly churned up to prevent the oil collecting on top of water and to keep the oil evenly distributed with the water; otherwise the mixture would be harmful to foliage and fail to destroy the aphid. An ordinary syringe or garden engine is the best thing to apply the mixture with. Syringe with good force to dissipate the woolly covering of aphid, and thus make the syringing more fatal.

The wasp pest also needs severely dealing with now. They are likely to be very numerous this year, as there was a very unusual number of queens evident. For instance, some time ago I sent a couple of youngsters to a raspberry square to look for queen wasps, with a promise of a penny each for all they killed; they were not long before they returned, exclaiming—"Here, sir, we've got more than two shillings worth of 'em," plain evidence of the great number of queens in existence. A very fatal agent of destruction to wasps nests is cyanide of potassium. A small teaspoonful dropped just at the mouth of their entrance to nest is certain destruction to them. This should be used just before dark, when all the wasps are in the nest or returning. Obtain the best quality, and have it ground; this makes it more effective than lumps. Gas tar poured into the mouth of the hole where nest is formed is a very ready and safe means of destruction, if the tar is kept in a garden-can with a long spout it is ready for pouring about a pint or more into any nest as soon as found.

As early as possible after strawberry runners are well rooted get them planted in their permanent quarters. Assuming that the ground has been for some time previously well manured, trenched or deeply dug; choose a day when the soil is in such a condition of dryness that it will bear any amount of walking on without clogging, and trample the ground thoroughly to make it firm and break down all lumps. After this make the ground perfectly level and smooth with plenty of raking. Trample the ground over the second time if there is any suspicion of the ground being spongy or soft, then draw very small drills across the plot both ways—i.e. from north to south and east to west—at 2½ feet apart each way for ordinary growing varieties, planting the plants where the lines cross. Make the plants very firm in the ground at planting and supply them with abundance of water for a week or two after planting in case dry weather prevails. This may seem an unusual amount of ground to give the plants in these days of heavy cropping, but providing the ground has been thoroughly well prepared and the plants afterwards well mulched and kept in good order it is none too much space to give them. I have gathered as much as three pounds of good ripe strawberries off a plant at a single picking under the method of cultivation I have described during the past few months. If

desired light crops such as lettuces, radishes, &c., may be grown between the rows of plants first year after planting.

Do not keep the hoe too long hanging on the wall or the cultivator "under the hedge," but keep them going on all favourable occasions, and especially if weeds have made headway during the recent busy times.

Clip over hedges, and clear out long grass from hedge bottoms round plots and orchards; cut out any noxious weeds by the root, to prevent any further spreading. Clean roads and paths and make out-of-way corners, &c., all tidy and clean. During this month it is a very good plan to make a tour of inspection of all fruit trees, and make careful notes of any changes to be made during the autumn or coming winter. Note anything that has done well or anything not satisfactory or worth continuing to grow. Be particularly careful to note any old trees that may need root-pruning or young trees making too much growth and failing to produce satisfactory crops of fruit. If any trees up to ten or twelve years of age are making a superabundance of growth and not producing a reasonable amount of fruit, mark them to be lifted when the time arrives (do not hesitate or say "I'll see what they'll do another year"), or more than likely your chance of crops will only be deferred until the time the trees are lifted. Trees that are not doing well may frequently be very much benefited by lifting and replanting them in a more genial or suitable compost, or it may happen that the tree has been too deeply planted, and the replanting of tree with the roots nearer the surface will cause it to break away into good growth. If there is not likelihood of much to be done, a handy method of noting the work is to bring round a few labels, write on the label what is to be done with tree, and tie it on the tree to remain until the work can be taken in hands. Be careful to have an eye to grafts, and if they have made much growth secure them against been broken off with wind by tying a light, tidy stake to the stock securely, and then tie the graft to this in such a way that it cannot sway with high winds.

The Vegetable Garden.

By WILLIAM TYNDALL, Horticultural Instructor,
Co. Kildare.

SPRING CABBAGE.—This is one of the most important crops grown in the garden, and much depends on the state of the ground, the time of sowing, the locality and variety sown whether the grower has success or failure. The best time for sowing seeds is from the middle of July to the end of first week of August, and I would make two sowings about the beginning and end of the time mentioned. For the early sowing select one of the small, early hearting sorts as Ellam's Early, Excelsior (Hawthorn), April (Sutton), or Flower of Spring, the latter is much larger than the other three varieties named. For the last sowing, in addition to Flower of Spring, sow either Nonpareil or Mein's No. 1, two good cabbages for succession. If not already sown, select ground in good condition and on a good warm border, and with the soil in a moist condition from the recent heavy rains, germination will soon take place and growth be very fast, so that the largest plants will be fit for putting out

from the middle to the end of September, not putting off planting till October, as is so often done, for with this vegetable earliness is everything, as at no season of the year is cabbage more appreciated than during April, when other vegetables are scarce. Cover the seed beds with a net to protect from birds that often do much destruction.

BROCCOLI.—Plant out without delay late broccoli, selecting fairly firm ground, and give plenty of room between the plants. Model, April Queen, and Victory are good sorts for planting now. Only put out good, stout, well-rooted plants at this time of year. If late cauliflowers are required, a small planting of Early Autumn Giant may still be put out in rich ground, and good heads should be cut in October till self-protecting broccoli are fit for use.

TURNIPS.—Make a sowing of Orange Jelly, Black Stone, or Veitch's Red Globe turnips on ground cleared of potatoes, and they will turn in useful for winter and spring use.

LETTUCE.—About the middle of the month make a sowing of lettuce to stand the winter and be fit for use in the spring, the strongest plants to be put out the end of September and remainder to stand in the seed bed till March, therefore sow on a warm dry border. Hardy Green, Hammersmith, Stanstead Park, and Winter Pearl are good hardy varieties.

ONIONS.—The seed should be sown at once of Tripoli and other onions in ground deeply dug and manured. A few good varieties are Giant Lemon, Rocca, Red Flat Italian in Tripoli section; Ailsa Craig and Bedfordshire Champion should also be sown, being quite hardy. If wanted for pulling young, White Lisbon is generally grown, being quick of growth in spring.

SPINACH.—Make a sowing of spinach in well prepared ground deeply dug and manured, work in a good dressing of wood ashes. Sow in lines fifteen inches apart. Good varieties are Victoria Round, The Barker, and the old Prickly spinach; the two former are equally as hardy as Prickly and have much finer leaves.

CAULIFLOWER.—About the third week of this month make a sowing of cauliflower seed (Dwarf Erfurt or Early London, and Autumn Giant) on a warm, sheltered dry border, and protect from birds.



MARAM GRASS (*Psamma arenaria*) is very common on the sand dunes along our coasts. It is provided with vigorous underground runners from which arise stiff shoots that grow to between two and three feet high. The leaves are long, rigid, and narrow, and of a glaucous light green colour. It is of great utility in binding loose sand and preventing the wind from shifting it inland. There are in many of our seaside golf links stretches of bare sandhills that might well be planted with this grass to the great improvement of the course. In Holland vast tracts of sand are being systematically reclaimed by the planting of maram. The method adopted is to dig up the underground runners (they usually lie about two or three inches below the surface) and to cut them up into segments, having at least one "eye" or shootbud on each piece. These are then planted in the sand and well stamped in.

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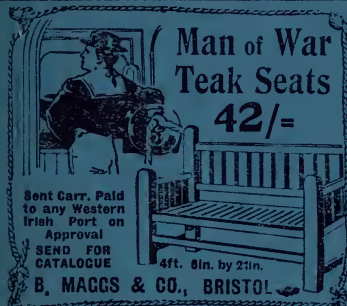
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IRISH GARDENING

VOLUME V.
No. 55

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

SEPTEMBER
1910

Horticulture in Ireland.

A VISITOR'S IMPRESSIONS.

By C. WAKELY, Chief Horticultural Instructor to the Essex County Council.*



WE were off to see the "Emerald" Isle! Would the name be justified? Well, after a pretty good scamper over the country, one must admit that the name fairly applies. True, we were having a cool, moist summer in East Anglia, which made the contrast less striking than would generally be the case. In this connection one is reminded of rich pastures, a profusion of ferns on many walls, and lastly of the deep-green colouring of many conifers.

Contrasts between the growth of plants under differing conditions are always helpful to the gardener, except to him who is fixed in a rut, and who seeks to apply hard and fast rules to plants. (Does he exist in Ireland? He is not unknown in England!) Once we have learnt that plants are very much alive we are ready to admit that many and varying conditions will probably influence their growth and development.

It naturally follows that the man working on any particular spot should discover how best to grow his crops. Hence a visitor may hastily form wrong conclusions. I may remark further that, as our party consisted chiefly of agriculturists, our visits to gardens were generally rather brief.

I managed, however, to pay a special visit to the Glasnevin Botanic Gardens. These are far-

famed, and, I must say, justly so. Such a combination of variety and good culture is rarely met with. The gardens and nurseries of Lis-sadell were intensely interesting, especially in connection with the effects of climate on plants. Very much more will be heard of this establishment in the near future, and many a garden will be enriched from its treasures. The gardens of Bessborough Castle showed many of the possibilities of horticulture in Ireland. Conifers, water-garden, herbaceous plants, shrubs, and fruit were all excellent, and I would fain have lingered longer in this beautiful spot.

Naturally I was on the look-out for the use made of much smaller gardens and holdings, particularly in view of the scope thus afforded for instruction. One was quite familiar with the important place given to the potato in Ireland, both as a food and, to a certain extent, for the supply of sets for planting in England. It is not for me to dogmatise as to what should be grown, but I must say that the lack of variety in the average cottage garden was specially striking to an Englishman. Here there is surely room for development and for a deal of instruction. Such variety tests as were seen at the Albert Agricultural College, Glasnevin, should, however, go far to remedy this.

Where the ground cultivated is of sufficient area to involve marketing of produce it is evident that crops must be considered for which there is a demand. In connection with small

* Mr. Wakely was a member of the party of Essex Agriculturists that recently visited Ireland on a tour of inspection, and whose proceedings were so fully recorded in the public Press.—E.D.

holdings, I believe, the pig is a very important factor. It can be partly fed on waste vegetables, and, in some cases, is the chief source of manure supply. Despire him who will, yet in England many a plot owes its fertility to his valuable aid! Hence I pass the hint on to any who need it.

Being specially interested in fruit culture I was pleased to note that attention was being given it in several places visited. That good apples can be grown in Ireland is evident, but growers must remember that these, like other crops, need cultivation. It is not enough to plant good trees, and because they are called *trees* to leave them to fight their own way in the world! As in England, surface cultivation round the trees needs to be kept prominently in mind. Reasonable pruning means much, especially in the form of thinnings of branches, in order to admit the all-important sunlight. Spraying at the right moment is also of vital importance.

I must regard the trials of varieties of fruits as of special value to the country. Owing to the difference of climate it seems evident that many of our useful varieties are not at home in Ireland. Hence the value of experiments before extensive planting is undertaken. It was a pleasure to hear such a good report of Bramley's Seedling apple. It is fast becoming a favourite in England also.

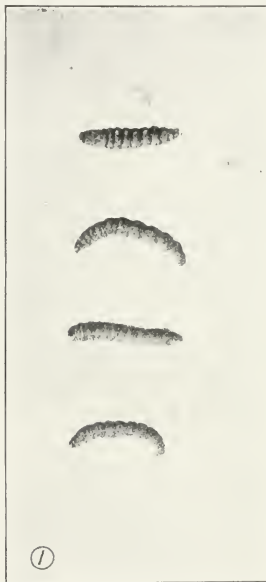
I feel confident that the good work done at such centres as the Glasnevin Agricultural and Horticultural College will be found to bear excellent fruit, as the information there gained is spread throughout the country. The work of travelling instructors is also evidently making itself felt.

Finally, can some one tell me why so much labour has been expended on such monumental gate-posts, or, rather stone pillars, in many places! These will evidently last a good while yet, but the adjoining fences often seemed to lack lasting properties. I must suggest a little

more attention to the latter, as a wide experience shows me that a trimly kept garden or holding is seldom lacking in quality or crops.

Maggoty Apples.

IT often happens, as most people know, that apples fall from the tree before they are ripe. On cutting such apples through the centre a grub is frequently to be seen at, or in the vicinity of, the core. "Worm-eaten" or "maggoty" is the popular description of such fruit. What is the nature of the grub, and how did it get there? There is no apparent opening by which the "worm" could get in from the outside. It is true that some apples show a hole or opening to a tunnel leading into the core, but such specimens have no contained grub. The little creature has disappeared, and the passage seen is a way it cut out for itself to escape. As a matter of fact it never entered the formed apple. It was born there, born near the very heart of the young fruit. The egg from which it was produced was laid by a small moth known to science as *Carpocapsa pomonella*, but to fruit growers as the codlin moth. A photograph of the mother (natural size) is shown in fig. 2. Those who can recognise it at sight



MAGGOTS OF THE CODLIN MOTH
(Slightly enlarged.)

may often see it flitting about the orchard in the early days of June, when the petals are falling from the fertilised blossoms of the apple trees. It is engaged in important business—the business of egg-laying. It settles down on a flower truss, and lays an egg in the "eye" of a recently fertilised flower, carefully glueing it to the base of the calyx to prevent any chance of a mishap. It pursues this work industriously all day. In about a week the eggs hatch out into tiny grubs that eat their way into the developing flesh of the young fruit. The tiny grubbling lies in the juicy flesh, feeding upon it, and eventually works its way into the core. Arriving there when the fruit is

approaching maturity, it attacks the pips or seeds, and this causes the apple to fall. When the apple falls to the ground the grub sets to work to bore a tunnel through which it may escape to the outer world. But no sooner is it out than it crawls back to the tree, creeps up the trunk, and shelters itself in one or other of the crevices of the bark. It is now snugly settled in its winter quarters. There it gradually changes into a pupa or chrysalis in order to quietly undergo those wonderful changes by which a grub evolves into a winged insect.

Those that do not reach the ground in fallen fruit either bore their way out, while the apple still hangs on the tree, and lowers themselves to the earth by means of silken threads, or if belated in development are harvested with the crop. The former reascend the tree as in the case of the windfalls. By the following spring the metamorphosis is complete, and the little creature flies off from the tree that has been its home throughout the full round of the year. It still, however, haunts the orchard, and so soon as the ground is flecked with the snowy petals of the scattered apple blossoms it fulfils its destiny in the scheme of things by laying its eggs one by one, as its mother did a year ago, in the yet open calyces of recently fertilised flowers.

This is the life-story, then, of the codlin moth very briefly told, and knowing it, it is relatively easy to shield the tree from its attacks, at all events we know when and how to fight it. To begin with, it is clear that in the fallen apple we have the grub entirely in our power. It is actually inside the fruit, but it will lose no time in getting out. Obviously these apples should be immediately picked up and given to pigs or be cooked, or be at once destroyed. This will get rid of a good many. The next point, grubs crawl up the trees after falling to the ground.

During their ascent they may be trapped by bands of straw, which, on the approach of winter, should be removed and burned. This will get rid of some more. The grubs hibernates as pupa under the loose bark. By scraping the bark you will remove those that have other-

wise escaped your vigilance, especially if the operation is followed by winter spraying with a caustic wash. But if the moth is prevalent in the district, egg-laying females may migrate from neighbouring plantations and make use of your trees for their reproductive operations.

This may be checkmated by spraying the trees in spring immediately after the fruit has set with a poisonous wash, such as arsenate of lead or Paris green. But one fact must be especially remembered, and if overlooked will render spraying ineffectual. When the petals fall after fertilisation, the calyx of the flower is open, but as the young fruit swells the cup gradually contracts, and by the tenth day or thereabout it is closed. When closed no spray can touch the hatching egg of the moth, so that the work must be done before the development of the young apple goes so far.

Bulb Culture in Bowls.

No prettier decoration for rooms can be used than fancy bowls with flowering bulbs grown without drainage. A good compost is cocoanut fibre refuse, mixed with fine shell and a little charcoal. The present month is a good time to plant. Fill a bowl

(a 4-inch one for small bulbs like crocus and squills, a 5 or 7-inch for larger bulbs, and a 10 or 15-inch one for a mass of bulbs) with the compost to within an inch of the rim, and press down firmly. Insert bulbs so as to let their tips appear above the surface; then plunge them in cocoanut fibre or ashes in a cool, dark room until the stems are about an inch long, when they should be removed to a cool room, frame, or greenhouse for several days to "harden." Keep fibre moderately moist by occasionally watering with luke-warm water. Place bowl in a well-lighted window, and turn it every day until the flowers appear.



THE CODLIN MOTH
(Natural size.)



A MAGGOTY APPLE
Cut to expose the Grub of Codlin Moth in the Core.



By courtesy of the Department of Agriculture

AN OBJECT LESSON ON HOW THE SCENERY OF A BOG COUNTRY MAY BE IMPROVED BY TREE PLANTING.

Scotch Pine planted on the Edges of a Road formed on "High Bog" ("Frosses"), near Rallymena, Co. Antrim.

[From a photograph by R. Welch, Belfast]

Tree Growth in Bog Land.

TO the current issue of the Journal of the Department of Agriculture Mr. A. C. Forbes contributes an interesting and suggestive article under the above title. He begins by telling us that "the area of bog in Ireland amounts to about 934,000 acres, or nearly 5 per cent. of the total surface. The greater part of this area lies on the West coast and through the Central Plain, and consists of sphagnum bog many feet in thickness, and completely saturated with water throughout. In addition to this 'high' bog, as it is termed, which is utilised at the present time for fuel generally throughout Ireland, a very large area of mountain land, especially in the west and north, is covered with a layer of wet peat, varying in depth from a few inches to several feet, and in the case of hollows and depressions, forming practically the same class of peat as that found on the deeper bogs at lower levels."

As to the utilisation of bog land for crops many attempts have been made, and, although to some extent successful in the case of partially cut-away bog lands, all attempts at the cultivation of high bog have ended in failure. In the former case drainage and manuring are possible and more or less effective, but in the latter, owing to the presence of so much sphagnum or bog-moss, it is impossible to drain, and so manuring is useless, and hence the soil remains poor, while the presence of acid renders it a most unfit medium for the roots of either ordinary cultivated crops or forest trees.

There is convincing evidence, however, to prove that at one time in Ireland trees grew over the bog-lands, as the stumps of Scots pine and birch are frequently found in the peat, their positions clearly indicating that they grew and died there, and not on the mineral soil below the peat. If trees grew there once on a time, why not now? Mr. Forbes answers the question in this way:—"The difficulty," he says, "lies in explaining, however, the equally obvious fact that the trees which existed over such wide areas of bog throughout the British Isles again disappeared. While it is possible that their destruction may have been partially brought about by the agency of early races of men, the definite sequence in the layers of peat and tree stumps, which has been recently established beyond a doubt by various investigators, points to a climatic change rather than anything else. Geologists have good grounds for belief that alternations of wet and dry periods have occurred since the deeper bogs commenced to grow. The tree growth corresponds to a dry period, the disappearance of this growth to a wet cycle. As the bog dries, and the natural bog flora dwindles away, a certain amount of weathering takes place on the surface, involving the decay and disappearance of the sphagnum, and exposing the black and more solid peat below. As the latter is gradually converted into vegetable mould or black earth, it becomes capable of supporting a growth of grass, bracken, various species of trees, &c., and, in time, may acquire a complete covering of forest growth. A return to wetter conditions, enabling the sphagnum to again cover the surface beneath the trees, restarts the bog into growth, and a growth of timber which has, perhaps, existed on it for hundreds of years is gradually

killed out by the saturation and souring of the surface, and the bog again becomes treeless. In the above manner it is conceivable that bogs might show a succession of forest crops separated by growths of peat, and indicating that drainage, or the lack of it, as the case may be, was the only determining factor in the changes which have taken place."

Another reason for the poverty of high bog lies in the fact that the water of saturation contains such an extremely low percentage of minerals that trees are starved out for the lack of them. The deeper the bog the poorer it is in minerals, hence as the accumulations of peat deepen the tree flora alters. For example, the Scots pine in a growing bog is succeeded by the birch, which requires a lower percentage of minerals, and when in turn the birch disappears its place is taken by the still less exacting willows.

The initial difficulty, then, in planting high bog is to get rid of the stagnant water that saturates the mass, and the author shows how difficult it is to do this unless at very great expense. In partially cut-away bog, where the newer and more spongy deposits have been removed, the task is not so difficult, and there are many places in Ireland where trees are growing upon peat ten to twenty feet deep.

As to the species of tree suitable for bog-planting Mr. Forbes says that while they are many in number only a few "succeed in recently drained bog. Birch, poplar, alder, pines and spruces, and occasionally silver fir, larch, Douglas fir, *Thuja gigantea*, &c., may all be planted on partly cut-away bog with a fair prospect of success, but much depends upon the progress made in the conversion of the peat into vegetable mould. The most successful on high bog are birch, mountain pine, maritime pine, Black and White American spruces, Sitka, and Colorado spruce. With the exception of birch, Sitka spruce, and maritime pine, none of these is likely to produce commercial timber. Birch grown in large quantities might form a profitable crop on peat in the long run, as its powers of reproduction from seed and stool shoots are good. So far as can be judged from present appearances, Sitka spruce may prove to be the most successful of all trees for growing into timber on high bogs, but more time is required to confirm this opinion. Maritime, Corsican, Weymouth, Austrian and Scots pines may all be seen growing into small timber on high bog, and the first named is probably the most successful. The tree, however, most commonly associated with Irish bogs is Scots pine. Partly owing to the freedom with which natural seedlings come up on bog, partly to its power of surviving under the acid surface conditions when planted, this species is far more universally represented than any other. In spite of its comparative longevity, however, it is no greater success as a timber tree than others, although it grows to large dimensions on cut-away bog. No species has, however, yet produced a crop of timber on high bog which could be considered as clearly establishing the fact that bog-planting is a financial success, and, until this has been demonstrated beyond all doubt, it would be unwise to regard it in any other light than that of an experiment, or as a means of reclaiming useless land.

"Apart from the financial point of view, it is possible

that the covering of the Irish bogs with tree growth might do a great deal towards improving the local landscape and climate of many districts. The dreary monotony of large bog areas might be broken by screens and belts, and the drying of the surface which would accompany the growth of trees would probably give rise to a drier and warmer climate than now prevails. Mountain and maritime pines and other species already mentioned might be used for such work as the planting of hedges and belts along roads running through or adjoining bog areas, which are at present absolutely treeless, and in this way the appearance of the country might be greatly improved at comparatively little expense."

As an illustration Mr. Forbes gives a photograph (which we here reproduce) of a handsome belt of Scots pine planted along a road skirting a high bog near Ballymena in the County of Antrim. The success of these trees also illustrates what drainage and the presence of a sufficiency of minerals (derived from the disintegrated road metal) can do for tree growth in high bog land. The rest of the article deals with the practical methods of planting on mountain peat, observing that the operation is comparatively costly and uncertain in its results, and should never be undertaken unless the planter is prepared to carry out the work in a thorough and systematic manner.

Violets for Early Spring.

IN order to secure flowers in early spring a start should be made at once, as the planting should be completed early in September. Of course they must be grown under the protection of a frame. The first and chief thing to remember is that violets dislike wetness—the soil must be kept moist, but not wet, and the air kept buoyant and not stagnant, so that as far as possible there will be little condensation of moisture within the frame. Protection, therefore, is needed from rain far more than from cold. So long as the temperature of the air is above 35° F. or so no harm will be done if the weather is fine and bright. The bed may be prepared with litter, trodden down quite firmly, making it, say, one foot deep and covering it over with nice loam to about six inches.

Before adding the loam the frame should be placed over the litter. The best plants to use are those raised from runners last spring. Plant them out in the frame at about six inches apart, and have them as near as you conveniently can to the glass; when planted, water them in. Should the weather be bright and sunny they may be lightly watered overhead during the next few days with a fine rose. The cover or lights should be not put on unless the days are rainy.

The Smoke Tree.

RHUS COTINUS, a European plant, is one of the many interesting shrubs at Glasnevin, and is now a mass of delicate red feather-like sprays, which almost entirely conceal the foliage of the plant.

These sprays are not the flowers but the hairy stalks of the fruits, which have become red where fully exposed to the sun and yellow on the opposite side, and it is these that give the plant this all-over soft feathery appearance. Not only does this plant attract us at this season of the year, but again later on when the leaves turned red in the autumn. The beaten



SCOTS PINE ON PARTLY CUT-AWAY BOG

About ten feet of peat below trees. County Tipperary.

track round the plants at Glasnevin prove the interest taken by the public. Those who know the lakes of Northern Italy will remember seeing this plant growing there and hanging over the cliffs, and they will remember the wonderful flame colour of the foliage in the autumn. Most of the species of *Rhus* possess some poisonous properties, of which *R. toxicodendron* (the "Poison Ivy") may be mentioned. This plant clings like ivy, and is extremely dangerous for those who are subject to these poisons, as it produces a form of erysipelas which is both painful and troublesome.

R. vernicifera is the "Lacquer tree" of Japan, and is largely used there for lacquering the various articles. The lacquer is obtained from wounds made in the stems, from which the juice exudes, at first white, but becoming darker when exposed to the air. The Japanese seem to have lost the real art of preparing this, as the present day lacquer is very inferior to the old-fashioned type.

R. M. POLLOCK.

Royal Botanic Gardens.

Current Topics.

By C. F. BALL, Royal Botanic Gardens, Glasnevin.

ONE of the last projects to receive King Edward's support and patronage was the International Horticultural Exhibition of 1912. This coming World's Show is expected to be the biggest thing of its kind ever held in this or any other country. As it is held in May the English Royal Horticultural Society have agreed to forego the holding of the usual Temple Show and also to contribute £1,000 towards expenses. The site chosen is in London, in the grounds of Chelsea Royal Hospital.

Although the French and Belgians may beat us in a few specialties, yet in the wide aspect of horticulture Britain more than holds her own. So it seemstime that Britain should show her rivals what she can do in Horticulture, for the long interval of forty-four years has passed since the last International Exhibition in London, which it is said gave a wonderful impetus to the horticultural trade. What a marked difference there will be in the improvement in nearly every class of cultivated plant, whether flowers, fruits, or vegetables. In 1866 hybrid orchids were unknown to most people, and now fortunes are invested in them. In 1856 *Calanthe Domini*, the first hybrid orchid, was raised in the Exeter Nursery of Messrs. Veitch. Mr. Dominy, after whom the hybrid was named, has thus the priority in the operation of rearing hybrid orchids. This early hybrid possessed freedom of growth and flowering unknown in the parents, and thus opened the eyes of many cultivators to the possibility of creating many new and beautiful forms.

After reading several glowing accounts of the Japanese Garden at the London Exhibition in some papers one naturally expected something quite above the ordinary, and worth going to see. Perhaps the accounts led one to expect too much, but my own idea was that it is a poor affair, and quite disappointing. Of course the Japanese idea of beauty in a garden does

not altogether correspond to our own, but even so, this cannot excuse the fact that many of the trees and shrubs were unsightly, some mere skeletons, for in a place like this money should not be spared to make the place attractive. To those who hanker after this style of gardening the Tully Japanese Garden near Kildare can be recommended as a far better example of the Japanese art; but even here it is apparent that the Japanese who laid out the garden was more of an architect than a gardener, for the stonework is built more for effect than to grow plants.

On August 6th the Irish Gardeners' Association paid a visit to the nurseries of Messrs. Watson & Sons, Clontarf. The members inspected the various stocks of roses, fruit trees, and herbaceous plants. On a lawn good pillar specimens of the climbing roses, Dorothy Perkins, Hiawatha, and Lady Gay were very showy and telling; Dorothy Perkins and White Dorothy, also on standards, were very beautiful. This firm has won gold and silver medals all over the kingdom for their border carnations, and these attracted special attention. Under a shade of tiffany were about 5,000 plants in bloom, including most of the up-to-date varieties. The plants showed great vigour, and some of the firm's own seedlings were exceptionally free in flowering. Among the new varieties of the firm's own raising were several of outstanding merit.

The photo shows *Astilbe Arendsii* growing



Photo by]

[C. F. Ball.

THE NEW ASTILBE ARENDSII.

Photographed in the Botanic Gardens, Glasnevin.

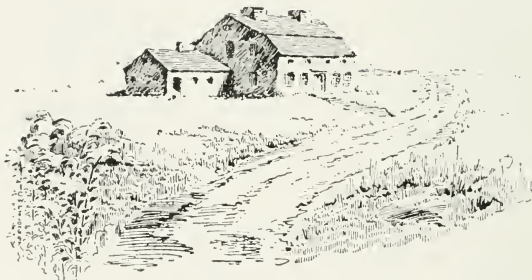
in the bog bed at Glasnevin. The flowers are of a soft, pleasing pink, something near Queen Alexandra. Mr. Arends of Ronsdorf, Germany, has raised a set of these hardy *Astilbes* from *A. Davidii* crossed with *A. Queen Alexandra*, *A. floribunda*, and others. In every case *A. Davidii* was used as the pollen parent, for when used as the seed bearer the seedlings possessed great vigour, but were shy bloomers. The varieties of *A. Arendsii* are of good habit, and seldom grow more than four feet high. Last July when shown at the London Royal Horticultural Show two varieties received awards of merit; these were *Venus*, a deep violet, rose colour, and *Salmon Queen*, with salmon pink flowers.

Flowering Shrubs

NOTHING gives so much character to a country home as a setting amid well-placed groups of flowering shrubs and trees. Shrubs in such situations should always be planted irregularly, never in rows, and very rarely as single specimens. The inner or front margin of the mass should be undulating and broken, as is invariably the case in natural shrubberies. Before planting the soil should be deeply dug, and for a year or two after the surface of the soil should be kept open and free from weeds by repeated hoeings. Larger shrubs, such as lilacs, may be planted about four feet apart, and smaller ones about half that distance. Until the shrubs spread the bare soil may be furnished with herbaceous perennials or with quickly-growing annuals, raised from seed sown broadcast between the specimens. Every autumn the shrubs should be mulched with strawy manure or partially decayed leaves to imitate the conditions that obtain in nature. When the shrubbery is established the plants will supply their own mulch by the fallen leaves. The mulch is a good protection against frost in winter and the loss of water by surface evaporation in the summer. After planting the branches of the shrubs should be pruned well back to give the roots a good start, but once they are well established they should not, as a rule, be interfered with, but allowed to grow naturally. It is, nevertheless, a rule in the case of some rapid growers, such as snowberry, to cut each year or every two years the branches close to the ground, so as to encourage the development of young shoots.

Care must be taken to select subjects suitable for the particular position in which each is placed. In the background tall specimens should be planted, such as variegated elders, mock oranges and lilacs, while at the sides shrubs of medium size, like weigelas, deutzias, and berberis are to be selected. In front of and backing the house low-growing specimens should be used, such as mahonias, flowering currant, and daphne. For planting here and there against the various groups, such showy shrubs as roses, hydrangeas, snowball tree, &c., may be used with charming effect.

One is constantly seeing houses in the country standing up naked and unlovely against the bare earth that with a little trouble and no great expense could be made beautiful and home-like by clothing the walls with a live covering and planting the immediate surroundings with fragrant masses of flowering shrubs and trees. It is simply surprising the improvement in good looks brought about even by a little planting round a dwelling, as may be seen by comparing the two pictures here reproduced. It is to be earnestly hoped that as



A HOUSE.

farmers in so many cases now possess their own farms that the pride Irishmen take in their homes will express itself, in part, by making them as beautiful and attractive looking as they know how, and one of the most effective methods of external improvement is that of furnishing them with a background of sheltering tree and ornamental shrub.

Of flowering shrubs and trees available for planting in the immediate surrounding of the home there are a great many to choose from, of which the following are fairly common examples. We give them in alphabetical order:—

1. Almond. Flowering in early spring.
2. *Aralia spinosa*, with beautiful flowers and foliage as well.
3. *Berberis*. Strikingly beautiful in fruit.
4. Broom. There are yellow and white-flowered species. Good for spring effect.
5. *Catalpa*. Large-leaved and white-flowered.
6. Cherry in many species and varieties.
7. *Cistus* or Rock-rose.
8. *Deutzia*. Laden with bloom. Very handsome at edge of shrubbery.
9. *Escallonia*. Flowering in July.
10. *Ericas* or Heath.
11. *Forsythia*. Well known, its yellow flowers appearing early in April.
12. *Garrya elliptica*. Evergreen. Covered with pale-green catkins in winter.
13. *Kerria* or Jew's Mallow. The double form flowers well into the winter.
14. *Laburnum*. Well known and unsurpassed for beauty when in flower.
15. *Lavender*. Fragrant. Grows well in a warm, sunny spot.
16. *Lonicera fragrantissima* or Bush Honeysuckle.
17. *Olearia haastii*. Covers itself with small, daisy-like blooms.
18. *Philadelphus* or *Syringa*. Its large, white flowers are very ornamental.
19. *Prunus* or Plum, *P. pissardi* being most attractive in the spring.
20. *Pyrus*. The scarlet flowers of *P. japonica* are well known.
21. *Ribes*. Of which genus the "flowering currant" is the best known.
22. *Robinia* or False *Acacia* is a particularly handsome tree.
23. *Rubus* or Brambles, the most ornamental being *R. deliciosus*.
24. *Roses*.
25. *Snowy mespilus*. Beautiful at all seasons.
26. *Spiræa*. Many species and varieties.
27. *Syringa* or Lilac. A well-known shrub flowering in spring.

28. Thorns, white and red. Common but very beautiful.
29. Viburnum or Guelder Rose. Throws out large trusses of bloom.
30. Weigela (or Diervilla). A pretty shrub, flowering in summer.
31. Winter Sweet (*Chimonanthus fragrans*). Usually trained to grow against a wall. Produces its deliciously-scented flowers in the winter.

Mushrooms.

THE cultivated mushroom is the species known as *Agaricus campestris* that grows wild in pastures, feeding upon the dead roots of grasses and other plants. Like all fungi it requires organic matter,

as not having chlorophyll it cannot feed as ordinary green plants do, and for the same reason it can make no use of light, preferring in fact to live entirely in the dark. The eatable portion of the mushroom is, as we know, pushed up into the light, but this part of the fungus is not the feeding body of the plant at all but simply an organ for the production and distribution of its spores. The "vegetative"

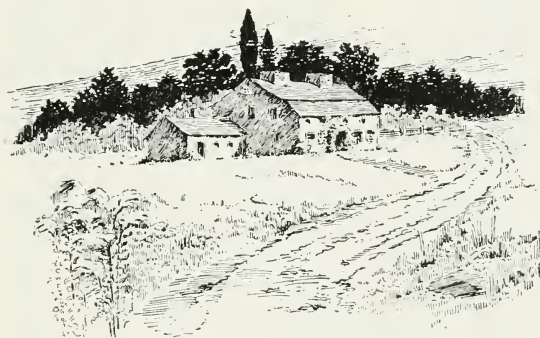
structure of the mushroom keeps under the green sward and in the dark always. This part consists of long branching interlacing threads, each consisting of a delicate tube containing the living protoplasm and nutritive sap of the plant. The threads may be felted together into whitish cords. The whole system of tubular threads is spoken of as the mycelium, and it is this mycelium, mixed with manure and dried, that forms the "mushroom spawn" used in the propagation of the fungus. The spores liberated in such enormous numbers of the gills underneath the cap are not used by cultivators. As with strawberries, it is much easier to propagate from the runners than from the spores in the one case, or seeds in the other. The chief cultural requirements of mushrooms are—(1) food of an organic nature, (2) moisture, (3) air, and (4) a suitable temperature. So far as is at present known the best kind of organic matter to use as food for mushrooms is the manure from horse stables. It contains dung, straw, and urine. The dung consists in the main of more or less finely divided portions of fodder or other food-stuff that resisted digestion during its passage through the intestine of the horse. When dropped, it already contains a vast number of putrefactive and other bacteria,

living and multiplying in the warm, moist vegetable refuse of digestion. These bacteria continue their growth when the manure is gathered in a heap, and it is owing to the great quantity of heat that they give off while thus actively engaged in chemically changing the composition of the constituents of the dung that the high temperature of a heap of fermenting manure is due. The mushroom grower then takes advantage of this natural source of heat to supply the necessary warmth required in starting his spawn into growth. But at first the activity of the bacteria is so intense that the temperature rises far too high, and the operation of spawning must be delayed until the temperature falls between 75° F. and 80° F. These decay-bacteria require air, and firming the heap so as to give a limited supply of oxygen to it will lessen the activity of the bacterial population. In fresh manure from the stable there is always a certain amount of urine in the straw, and the urea in this being soluble in

water is always the first to be attacked by bacteria. As it ferments, ammonia is given off, and this, together with other gases liberated in the heap during the first vigorous rush of fermentation, are, when present in excess, likely to harm the delicate running spawn; therefore these hurtful gases must be given an opportunity of escaping.

These, then, are the chief underlying principles of successful mushroom culture. Now, as to the "practical" cultural methods which are usually adopted by the best gardeners.

The fresh manure as received from the stable is first shaken out and all the long straw (any beyond a foot in length) is thrown in a separate heap, to be afterwards used for covering the made-up bed. The separated manure should be at once made up in a heap, the usual size being 12 feet wide and five feet high, and left to "heat up." It must then be thoroughly turned, bringing the inside material to the outside and outside material to the inside of the heap. This will allow all the free gases to escape and at the same time equalise the fermentation and, therefore, temperature of the manure. If the manure appears to be too dry it must be watered with a coarse "rose," and here again great judgment must be observed. It is impossible to give exact instructions as to time and number of turnings, as so much depends upon the age and quality of the manure, but the process is a very critical one, and a great deal depends upon doing it rightly. Uniform fermentation and sweetening of the heap are the two objects to aim at. When toned down to the proper condition of mellowness the manure is then mixed with



A HOME.

good, fresh loam in the proportion of three or four parts to twelve of manure.

Some market growers use cow manure to mix with the stable manure (in the proportion of one to six), and others use tan that has been lying in a heap for some time. When the latter is used the proportions are also, we believe, usually one to six, and it is said that mushrooms rather like the presence of the tan in the bed.

Having prepared the material for the bed the next point is where to make it. An underground cellar is considered the best place, but any cool, damp outhouse will answer. They can even be made in the open air in ridges about three feet wide at the base, and steeply sloping upwards. If the bed be made under cover it need not be made deeper than eighteen inches or two feet of compost well trodden down and made level on the surface. Care must be taken to water the compost if it appears to be too dry.

When the internal temperature of the bed reaches from 80° F. to 75° F. it should be spawned. The "bricks" are broken up into pieces about two inches square, and inserted from nine to ten inches apart, just below the surface of the bed. After planting the spawn the bed must be immediately covered with a layer one or two inches thick of fine loam, carefully beaten down with the back of a spade, making it even all over.

Finally, a covering of straw of about six inches deep is to be placed over the whole exposed surface, and the operation is then complete. In order to keep up a uniform moisture in the air it is advisable to syringe the walls and floor with water about twice a week. In about six weeks time the young "buttons" may be expected to begin making their appearance. When they do the straw should be carefully removed and the bed watered with soft tepid water (80° F.), after which the straw is to be relaid unless the bed is in a dark place, in which case it will be unnecessary.

By following these directions intelligently and observing any one may secure a good crop of mushrooms.



THE flowers, still faithful to the stems.

Their fellowship renew ;

The stem is faithful to the root

That worketh out of view,

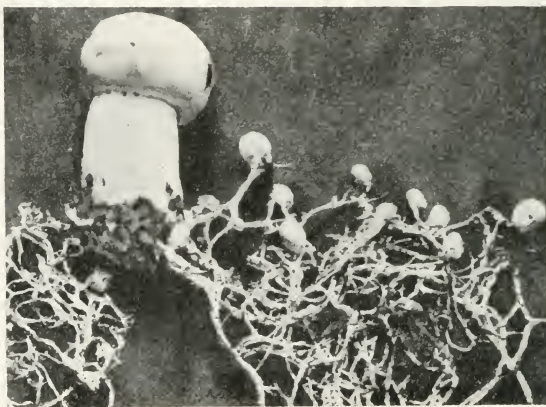
And to the rock the root adheres

In every fibre true.—*Wordsworth*.

Sweet Peas at the Show.

IT will be readily admitted that the exhibit of sweet peas at the Autumn Show of the Royal Horticultural Society on the 23rd ult. was one of its most distinctive and attractive features. True, there were exquisite roses, dahlias and begonias such as are rarely seen, gladioli of excellent quality and magnificence of colouring; but when one stood at the entrance of the huge tent and caught sight of the double staging of sweet peas running the whole length of its 120 feet it was something not easily to be forgotten, and seemed to form the foremost attraction to the crowds that attended the show—one of the best shows ever held by the Royal Horticultural Society, and far better attended than is usually the case.

Fortunately favoured with a fine afternoon, so rare during the present season, the ladies donned their gayest attire and made a brave show in the charming grounds of Lord Iveagh's, so kindly lent for the exhibition. Pink shades, of course, predominated among the sweet peas, graduating from the delicate blush of Mrs. Hardcastle Sykes to the deep carmine of John Ingman and Marjorie Willis. Helen Lewis, with its slightly orange shade, was very fine; it maintains its great size, perfect position of



MUSHROOM PLANT

Showing the interlacing cords of mycelium that feed and live under-ground, and the developing "mushroom" produced from them.

blooms, and the beautiful combination of shades which were so remarkable and created such a sensation when it first appeared in 1905. It seems to improve each year in all these qualities; no exhibit is complete without it. It is somewhat difficult to grow owing to its requiring a certain amount of shading in sunny weather—not too much—for then its shades become dull and uninteresting, so when it is shown in all its perfection the judge, knowing the difficulty of culture, gives it a high mark. The same may be said of almost all the orange and scarlet shades, though some are claimed to be sun-proof. A dull, showery season like the present seems to suit such kinds best, which may be the reason that here and in Scotland these varieties are exhibited in best condition. John Ingman, too, is one that cannot be omitted from a first-class exhibit; rather mixed when it first appeared it has outstayed those other rivals—E. J. Castle and George Herbert—which ran it so close, and, like Helen Lewis, it seems to improve every year. One could not help noticing the absence of striped varieties at the show. "What good are they

anyway," as an exhibitor said, "except that they don't show spots and weather stains; any one can show a striped." Still there was a very beautiful bunch of Prince Olaf shown in the single variety class which did not obtain the prize it merited, as there were no prizes offered for striped varieties. Audrey Crier, salmon pink, is a most beautiful flower when it comes true, and there was a magnificent bunch of it in Mr. Cowdy's cup exhibit. Constance Oliver and Mrs. C. W. Breadmore in their classes were very fine, as were also Elsie Herbert, Evelyn Hemus, and Frank Dolby; but the most striking and outstanding varieties in the show were "Earl Spencer," an immense and vigorous

flower of the same colour as Henry Eckford, but better in every way and waved, shown by Miss Osborne, and "Edna Unwin," an orange scarlet of great substance and brilliancy of colouring, sent out by Unwin last year, and shown by Mr. Cowdy in magnificent form; these two varieties stood out above all the others, and were the great centres of attraction. Of the whites "Etta Dyke" was the most popular, though it has not the substance or purity of Dorothy Eckford, but waved varieties are in the ascendant. "Snowflake" was shown in splendid form in the cup winner's nine, and promises to oust Etta Dyke from premier position in the white section. Frank Dolby was the best of the lavenders, "The King" best of the crimsons, though perhaps a little too much waved. Most of the prizes were captured by Northern growers, possibly because their season is a little later;

still they have the knack of doing things in a very thorough fashion. Nothing can withstand the enthusiasm and thoroughness of Mr. Cowdy. Loughgall, who seems to win wherever he exhibits. He won the Nutting Cup with a matchless nine, huge in size, which some consider coarseness, but beautifully fresh and clean, great depth of colour and length of stem. He pinches each alternate plant when quite young, and then when the unpinched plant has thrown its first crop of early blooms it is cut back ruthlessly to make room for the pinched plant which is coming along. The "cut back" is then fed generously to promote new growth, and so a succession of exhibition blooms is obtained. Lady Dunleath was a close second in both these classes, having very large blooms, but they showed a great many weather stains. It is said that Mr. Cowdy gathered his blooms in torrents

of rain on the Monday, and dried them artificially by an electric fan and heated air. What will not sweet pea enthusiasts do to excel? This operation must have been very cautiously carried out; but be it as it may, his blooms were remarkable for their freshness and spotlessness. He brings them all the way standing in water, having very ingeniously constructed boxes of his own design which hold the vases in position. Of course he keeps a sharp watch on the railway porters, so that the boxes themselves may not be upset. The first prize for twelve bunches was won by Miss Osborne of Drogheda with spotless blooms, richly coloured, and of good size. They were simply exquisite, and considered by some much more elegant and chaste than the Loughgall blooms. They were also beautifully set up, Miss Osborne spending two hours in arranging these bunches. The second prize was taken by Dr. O'Donel Browne with larger blooms, but not so fresh or clean. Miss Osborne won also several prizes in the classes for single varieties. She grows her sweet peas herself, and knows every plant. There is only one royal road to success in growing sweet peas, and it is the road of experience, watchfulness, and enthusiasm. Almost each variety requires different treatment. The character and depth of the soil must be taken into consideration, climatic conditions demand differences of culture; in fact, exhibitors maintain that every plant requires watching, and that it is a great mistake to stimulate plants that are growing well at the same time and with the same tonic



MYRTUS LUMA (SYNONYM EUGENIA EPICULATA).

(For description see p. 140.)

as those plants that are flagging. Experience alone can teach what is necessary, and this can be acquired only by watchfulness and brain work. One may ask is the game worth the candle. Undoubtedly it is. What is worth doing at all is worth doing well. The magnificent blooms exhibited could never have been produced but for the rivalry and tireless endeavour of enthusiasts.



"It is the deciduous trees and shrubs which announce the arrival of autumn. Green leaves take on a colouring of yellow, brown, or red, more pronounced than the yellows and reds of spring. As the wind blows a few of the ripest leaves fall, and one becomes conscious of a feeling of evening, of the end of a play, or of the end of a beautiful poem."—Harry Roberts.

Roses.

By O'DONEL BROWNE, M.D.



WILL this rain and wind and absence of sunshine never cease? First we get a nice warm day which puts our flower buds in the mood for opening, and then the rain comes like a glue-pot and hermetically seals them up. If there were a class for gummied-up roses I believe I should win a first prize at a show. Shading may help to keep the rain off when we have no wind, but when you get them coupled it is full time to be vexed. Never have I seen such splashed flowers, especially the pendant Teas, as we have had this year. Things looked very bad during the first week in August. Nothing but continual rain for three days is not calculated to cheer a rose exhibitor, but ere we held our show in Naas a few redeeming rays

of sunshine changed all. From the north came the wail, "no flowers," the same from Moyvalley, where Mr. C. K. Douglas reigns supreme (why Mr. Knowlton should have called this worthy rosarian a lion in the Irish field I do not know), and the same from poor Naas. But when the day—that eventful day the 10th—came what a wealth of roses came to gaol from the North. Never, never have I seen the darks done so well, and as if vying with them came glorious Lyon. That twenty-box of Lyon, flanked as it was by twenty-four Hugh Dicksons, was a gem; but why were they not mixed alternately in the two boxes? Perched up on a large tripod was Charles K. Douglas, a seedling not yet permitted to go about by himself, and right well he looked. Poor Charles! to see him anchored up there and ladies calling him a dote, whilst among those very ladies stalked the same Charles K. Douglas in the flesh, but no roaring was heard. He only roared in Dublin! Twelve new flowers of the new seedling George Dickson came from Newtownards, and what colour they had! Dark velvety maroon after the Earl of Dufferin and Horace Vernet about explains the colour. The nicest flower in the show was Gloire de Chedane Guinoisseau, a dark hybrid Tea in its perfect beauty, shown by Alex. Dickson. What it was that made it always catch my eye I do not know, and I had hoped to have that flower for my own study when packing up time arrived. Alas! Mr. Hugh Dickson's quick eye also was watching, and my flower was actually carried back all the way to Belfast to be shown there. I can never forget that flower.

The pity of the show was that the crowd got so

great that by the time people arrived it was well nigh impossible to get near those nurserymen's stands. Messrs. Hugh Dickson again won the Countess of Mayo's Cup with a grand stand. At the back stood eleven great tripods carrying flowers of Simplicity, Hugh Dickson, Mrs. Stewart Clarke, Charles K. Douglas, Ada Lady Goulding, Miss Evelyn Moore (these three last seedlings not yet in commerce), Kathleen Henderson, Lyon Rose, Mme. Ravary. Then in front were half a dozen twenty-four boxes, and not a bad flower in the lot. Messrs. Alex. Dickson were a very close second, and were awarded a gold medal for a highly meritorious display of glorious roses contained in tripods and boxes. Their seedlings were much admired, and rightly so. We will say nothing of the amateurs' flowers beyond that they were good. A very creditable lot came with Mr. Edward Cowdy. Not content with taking the sweet pea cup and prizes he annexed the six roses. What will become of us poor southerners if Mr. Cowdy does roses like his sweet peas? I leave it to other pens to tell of his sweet peas.

So as I am on what I have seen at the shows let me tell you about the roses I saw at Stillorgan show. Mr. Crozier was exceedingly strong at this show—perfect flowers of Druschki and Dean Hole were his best. There was a fault in some ones six Teas which I was sorry to see. When will amateur exhibitors remember to correctly label their flowers when they are planted? I forget now what the names were. Suffice it to say that they were not in the official catalogue of the National Rose Society, but there sitting among the six Teas were two fine flowers of Dean Hole. This box was marred by this slip, and it was a pity, as had the exhibitor put Teas instead of hybrid Teas she (I think I am right) would have been a winner. Now, there is one more fault I found there, and which I took the trouble to correct, and let us hope the exhibitor will not transgress again. A fine flower of Lyon rose was shown and labelled "The Lion" (not Douglas). "The Lion" is a climber, a single rose, and not of much use, but Lyon Rose holds just the very opposite qualifications. Therefore, when a raiser gives a rose a name let us keep to it, and not have people who are not conversant with the names of roses ordering the wrong varieties owing to lazy exhibitors. I just managed to check one person dotting down "The Lion" for Lyon Rose. What's in a name? A good deal sometimes.

Myrtus Luma.

This plant is not widely known or distributed, yet it is perfectly hardy, being quite immune from frost when *M. communis* is frequently cut to the ground. In its adult state it carries large, white, fragrant inflorescences which are borne in great profusion, and in pretty contrast to the glossy, broad, oval-leaf foliage. The bark is of an attractive nut-brown colour, which periodically peels like the Oriental Plane. It is a remarkably attractive plant, flowering at present at Pennick's Nursery Gardens at Delgany, Co. Wicklow. It is about twenty-five feet high, with a ten feet spread. It is of handsome columnar habit, and comes from Chili.

The Month's Work.

Flower Garden and Pleasure Grounds.

By E. KNOWLDIN, F.R.H.S.

BRIEF LIFE.—In the early part of the month no relaxation of effort will obtain to keep all on the formal garden decently and in order, but with the 20th not a few regard a good, nipping frost, which sometimes occurs about that date, as an unqualified blessing to give the whole thing its quietus for the season in order that the whole may be cleared off without compunction, and the planting for spring effect go on forthwith. Otherwise the whole thing is apt to drag wearily on with ever-increasing damping and decay as an eloquent reminder as far as summer bedders are concerned. "Brief life is here our portion." Still, whenever the clearing off occurs—and under any conditions did we ever find it of any service to spare it by the end of the month, although often seen dragging its weary, derelict way far into October—the clearing off should be done systematically, as advised for spring, otherwise the muddler, in less than a month, will be hunting the debris in looking ahead.

WHAT TO SAVE.—The bedding *calceolaria* is one of the most amenable of subjects for the purpose, provided its simple wants are catered for, and a frame should be in readiness under a north wall or hedge, for promptly putting in a batch of cuttings as soon as lifted, where, with but a light covering during severe spells, they will need no attention till early spring. The taller growing *amplexicaulis*, nevertheless, is not so easily satisfied, and it is as well to pot or box up sufficient stock for spring propagation. So with the summer flowering *salvias* of the *Splendens* type, of which *Fireball* is the finest variety, and has this season captivated all in the People's Gardens, Phoenix Park, by its dazzling, scarlet floriferousness. *Lobelia Waverly Blue* may be similarly treated with the same object, and where stock is short the bedding geranium will not be forgotten. Another good bedding plant for similar treatment is the small-leaved *Gnaphalium microphylla*. As for standard fuchsias, heliotropes, and cannas, they can as lifted be stacked under the roof of an open shed with a good complement of dry leaves around the roots for future attention as demanded, although the cannas, like the dahlias, will be comfortable enough the winter through, and so little trouble do the cannas give, and such fine summer ornaments are they, with their handsome foliage and brilliant flowers, that one wonders they are not more available of.

BULBS A-BEGGING.—We are inclined to agree with an enthusiast who has been looking through the bulb lists now to hand that bulbs are going a-begging so low are the prices of the showier and better adapted bulbous subjects for the spring flower garden, and now is the time to order, for first come best served. True, some whose soul loveth a bargain may wait till the fag end for the clearings at an even cheaper rate or hie them to the auction dumpings to save pence and loose pounds in quality, but *cui bono*? Respecting bulbs for bedding our thoughts practically begin and end with the tulips, from the early Duc Von Thol family to the latest May-

flowerers, which, according to the season, carry us from March to June. Bedding hyacinths, if we dare say it, we are not in love with, but fortunately for vendors others are not of that opinion, and when referring to those gorgeous samples of King of the Blues, seen each season in the People's Gardens, we cannot gainsay that opinion, though weakly holding our own. Of course it may be said where do the daffodils come in? But of these anon, for "dirt cheap" though they be we want to keep them free and unfettered from formality.

ON THE GRASS.—There are a thousand places awaiting beautifying with a few daffodils, on the grass or off it. In sunny nooks and in shady ones—that is, under deciduous trees, where possibly but little else will grow and bare spots abound, for it is in such a place as the latter that we see during the season the most robust growths of the old *Telemonius plenus* (not our favourite by the way), where they have been for fifty years at least. There may be daffodils which refuse to grow in grass, but we do not know of such, or, when once introduced, will not go on forever. And then there are so many nooks and corners of the pleasure grounds which in spring seem to us crying for the nodding flower, and if one can have them distinct—viz., in this nook a brave planting of *Barrii* conspicuous, round that bend a bold patch of *Sir Watkin*, and so on, and so on, each turn revealing some fresh delight, whilst further afield, perhaps in a pasture, a whole sweep can be seen, and our ideal is realised. Would the gay tulip was but half as well behaved, but grass is its bugbear, and practically fresh tilled soil its need. The Dutch crocus, however, is a delightful thing anywhere and everywhere, and in mixed colours on the greensward, simply ravishing just at the time when most needed for a bit of colour, like good wine, gladdens the heart at that season, and the pale snowdrop is as cold as it is chaste. All the above should be sown carelessly by hand where wanted on the lines advanced, and simply dibbled in exactly where they fall—in hard spots a prod with an iron bar does the job—filling up the holes with a little light compost after and firming with the foot.

PLANNING.—If Pope had any particular thought when telling us man never is, but always *to be*, blessed, the allusion, surely, must have been to gardening and its votaries, and we may take it there is neither season nor garden in which mental notes are not taken for further advance towards the ever-receding ideal. This begins in the flower under the dual bedding system, and in some places we fear ends there. We would call attention at this opportune time, ere the foliage is off, for noting what may be done later to increase the beauty and interest of the pleasure grounds, and that on as bold a scale as the position permits. For instance, taking an imaginary view from the windows to a background or foreground of sombre foliaged trees, deciduous or otherwise, what a welcome addition to such would be a bold mass of the golden elder or, on the still larger scale, planting say of half-a-dozen copper beech in contrastive harmony with the common form! True, we do see these things employed, but rather in a manner barely suggestive of their inherent capabilities, for somehow the dot system, "like sick men's dreams, varies all shapes and mixes all extremes." Dotting seems to have run like a blight

through many a place, the appetite for which has been all too freely fed by the wealth of modern introductions. So we see in some places where purchasing goes on freely the whole taking on a more variegated appearance year by year, and possibly rather by accident than design an occasional true note is to be found in—dare we say it?—a general discord.

FORM AND COLOUR.—It is not colour alone, nevertheless, that has to come into the calculation for landscape effect, form must be regarded as the twin sister in harmonious planting, and violent contrasts strike a jarring note. Take, for instance, the Globose biota (*Thuja aurea*) and the tapering Cupressus erecta viridis planted in proximity, both undoubtedly handsome things, yet how happy could one be with either were t'other dear charmer away; but place a group of three or five in one position, and the same of its contrastive neighbour in another position, with some neutral zone to act as an eye-barrier from the point of approach similar to that suggested on the lesser scale for daffodils *au naturel*, and on the larger scale a planting of, say, larch, and another of the Austrian pine in a landscape, of such, surely, is the better way. Distances, too, can scarcely be ignored for effective grouping, and the common form of golden elder, which gives such a fine bit of colour where distance lends enchantment to the view, may well be replaced by the more refined cut-leaved form, *S. racemosus*, serratifolia aurea, as occasion demands. Let it not be thought, however, that we are elder mad, it is merely suggestive of a hundred things for planting by the dozen or even hundred as the scale demands, nor are the suggestions confined to summer effect, for evergreens, and we may add everyellows (as the best types of aucuba), must all come into the calculation of judicious designing, whilst the flowering shrubs similarly treated under their dual aspect of form and colour have to play a lion's part in the harmony.

NATURE'S WAYS.—That our happiest inspirations may be drawn from nature goes without saying, although now and again, very rarely perhaps, does the great teacher appear to give some example for the express purpose of showing, per contra, how *not* to do it. Far and near are striking examples provided that those who run may read, but out of all comes the still small voice "Don't Dot." Surely, if the doctrine of dotting so persistently adhered to by her pseudo disciples had entered into her scheme she would have dotted down in each of the forty States (U.S.) one of those giants of the primeval world that are found as a grove in California. The simile, we admit, is far-fetched, and in natural selection and family genesis simply impossible, even absurd may be said, but to our mind nature's ways in this direction are the very keynote of harmony when reduced to scale to suit requirements. It is, of course, fully recognised in our bedding, for that man would be thought mad who would indiscriminately make a hash of form and colour in his flower beds by dotting down a geranium, then a calceolaria, and so on through the whole list of his bedding stock; but once off the garden and into the pleasure grounds it is another story. Yet the fates forbid that ever planting in the latter should run on prim and formal lines of Dutch art at one time in vogue, and although examples of the latter command our interest, and sometimes possibly admiration, as relics of the past they are things to be kept, not copied.

It is a big subject, but all too briefly, and we fear not too clearly discussed here; but with the planting season at hand it is surely worth some consideration now in order to reduce vague ideas into more definite plans for the near future.

The Fruit Grounds.

By A. BARKER, Carrigoran, Newmarket-on-Fergus, Co. Clare.

OPERATIONS in the fruit grounds during September are not of a very pressing nature, there being at this time a lull between summer work and the commencement of winter operations. Matters requiring attention principally are such as clearing off arrears of work left over from August, such as finishing of strawberry planting, a final pinching over any late growth on fruit trees, tying or nailing in any leading branches, that may, if left untied, be in danger of being broken by high winds. Any late apples that have not already had the side growths pruned may with advantage to both trees and fruit still be pruned; the same may be said of any unpruned trees (late or early), as pruning even now will be a great aid to ripening wood and improving the fruit buds for another year, and especially so as we are having so much dull, sunless weather. Anything at all tending to thoroughly ripen and finish off the fruit buds should be freely attended to. It should be always borne in mind that the next year's crop of fruit is to a very considerable extent "grown" this year (or always during the year previous to its maturity), therefore, the better finished and the more plentiful the fruit buds are at the end of the growing season, so in proportion will be the probability of a plentiful and fine crop of fruit for the following year. Look through trees of early apples, such as Mr. Gladstone, Beauty of Bath, or any early apples from which the fruit has been gathered, and cut out any overgrown or badly placed branches or overcrowded branches, wherever they may be, as it can be more readily seen now where such pruning is necessary than during the winter, or if you doubt the wisdom of sawing out branches at present cut a notch or slit out a piece of bark to mark them for the winter pruning. Peach trees are much benefited by having the old fruiting wood cut out after the fruit has been gathered; the new growths should at the same time be tied over and rearranged wherever overcrowded. Give the trees also a liberal washing over with a syringe or garden engine, especially if any red spider is present; a little soot water added to the syringing water will expedite the clearance of red spider. Do not any longer delay making a note of any root-pruning, lifting, &c., to be done during the autumn and winter.

If any planting of new trees is contemplated in large or small numbers get the ground prepared for planting if it is not already in sufficiently good order. Trench the ground if possible, but in cases where trenching would bring to the surface heavy and retentive sub-soil, deep digging and planting the trees on slightly raised mounds is advisable. In the course of trenching or digging incorporate a fair amount of rich, rotten manure (more or less according to condition of land), leaf-mould (mortar rubble if obtainable), road

scrapings, fire heap, ashes, &c., according to the nature of land to be dealt with. Mortar rubble and leaf-mould would be especially beneficial on heavy, retentive soils. Also get your orders for trees despatched to your nurseryman immediately or as early as possible, with instructions to forward as soon as the trees are ready

and pears will flourish. This list may be of service where there is any doubt as to what varieties should be planted, Dessert apples in rotation as they are fit for use—Mr. Gladstone, Beauty of Bath, Irish Peach, Lady Sudeley, Devonshire Quarrenden, Worcester Pearmain, James Greive, Wealthy, King of Pippins, Cox's Orange Pippin,



NEW EARLY BICOLOR DAFFODIL—WM. BAYLOR HARTLAND.

(Named by the late Mr. Burbidge in honour of the raiser.)

for lifting. By so doing you have a much greater chance of having the trees in hand ready for early planting, also of securing better trees, as orders are generally despatched in the order as received by nurserymen, consequently the earlier you place your order the earlier you will receive your trees.

I append a list of apples and pears of varieties that are reliable and likely to give good results wherever apples

Rival, Gascoyne's Scarlet, Adam's Pearmain, Lord Hindlip Reinette du Canada.

Cooking apples in order as they are to be used—White Transparent, Lord Suffield, Lord Grosvenor, Ecklinville, Grenadier, Warner's King, Peasgood's Nonsuch, Lord Derby, Bismarck, Mere de Menage, Hambling's Seedling, Annie Elizabeth, Newton Wonder, Bramley's Seedling, Wellington, Lane's Prince Albert.

Pears in order as they ripen.—Doyenne d'Ete, Jargonelle, Beacon, Souvenir du Congrès, Clapp's Favourite, Williams' Bon Chrétien, Marguerite Marillat, Conference, Louise Bonne of Jersey, Alexandre Lamtre, Marie Louise, Pitmaston Duchess, Beurré Hardy, Doyenne du Comice, General Wauchope, Glout Merveilleux, Beurré Diel, Bergamot d'Esperance, Easter Beurré, Beurré Rance, Duchess de Bordeaux.

Apples and pears carrying heavy crops (and especially on walls) must still have abundance of water, and if the rainfall is not ample for their needs, where artificial watering is possible give the trees abundant waterings. Weak manure water will be most serviceable where exhibition fruit is required for local or other shows. Pay particular attention in the way of watering to new planted trees or any that were lifted last season; the trouble will be amply repaid by future progress of trees.

Fruit rooms should be overhauled, thoroughly cleaned out, and walls whitewashed, to be in readiness for storing away the fruit of the season. I am afraid the crop of apples and pears this year is not such as to call for any special provision for storing away, but in case of specially-built fruit rooms not being provided, apples and pears may readily and safely be stored away in trays (such as are sold by various firms), and the trays piled up five or six or more deep in any room, outhouse, or cellar where an even and moderate temperature can be maintained, free from too much moisture, frost, or any great dryness, and where daylight can be excluded at will. I have on different occasions seen potato sprouting boxes used for storing away fruit, and very good receptacles they prove. These boxes may be filled as full as they will hold with apples or pears, and piled away six or eight deep, leaving a very small space between the boxes. Be careful to keep out mice or rats, as these pests make great havoc amongst stored-away fruit wherever they can gain access.

Do not allow woolly aphids any rest, but persistently destroy it, as advised in last month's calendar. If there remains any untidy weedy places make an effort to get all arrears of hoeing, cleaning, and tidying up got well through while we have long days, and before other pressing work interferes.

The Vegetable Garden.

By WILLIAM TYNDALL, Horticultural Instructor,
Co. Kildare.

CELERY.—Early in the month earth up the main crop celery, leaving that required for latest use till the end of the month or early in October, if frost keeps off, as by that time the plants will have nearly completed their growth. With all the rain we have had this summer celery has made fine growth, and in most places is very tall and strong, so that before earthing up many side growths and decayed leaves require removing, tying up each plant with a piece of matting; then dust between and around the plants with soot and lime, equal parts, to help to prevent slugs and worms injuring the celery before earthing. Earthing should be done on a fine day when the soil is fairly dry, breaking it up well before putting up to the plants, taking care not to cover the heart of the plants. In three weeks after give a final earthing up.

CABBAGE.—If seed of suitable varieties was sown in July and August as recommended in calendar, good plants should be had fit for planting from the middle of the month, selecting for early planting these varieties noted for their earliness and freedom from bolting. As cabbage well pays for high culture the plot should be deeply dug and well manured with farmyard manure, giving to the surface a dressing of soot and lime; this helps to free the ground of slugs, which often do much damage to the plants when put out. A great mistake often made is planting spring cabbage too late, as once October comes, if planting is not finished, little time is left to give the plants a chance of getting established before the hard weather sets in. Varieties like Ellam's Early, Excelsior, Cattell's Reliance, and April may be planted in rows two feet apart and one and a half feet between the plants. White Early Offenham, Flower of Spring, and Mein's No. 1 require two feet every way. Dibble out all the plants left in seed beds closely together, as they stand the winter better when transplanted. They will be useful for filling where plants fail and for putting out in spring.

ONIONS.—Spring-sown onions should now be fit for harvesting, and, if the weather is fine, the bulbs may remain for a week on the open ground, finishing up the ripening under cover. Always have the onions exposed to the sun and light to thoroughly dry them before hanking, which is probably the best method of keeping. Autumn-sown onion seed is making good growth, and those sown in July should be fit for planting the last week of this month on well prepared ground made firm, not putting the plants in deeply.

LETTUCE.—The end of the month put out some of the plants raised from seed sown last month; these should turn in early in April when vegetables are often scarce.

SPINACH.—Make another sowing of this useful spring vegetable in ground prepared as recommended last month, thinning to six inches apart.

POTATOES.—These should be lifted as the haulm decay, selecting a dry time for the operation, it being a great mistake to delay lifting till October or November, as is so often done. Pits are the best way of storing, but either have air-holes or a foot divide on top of pit for a week or two to prevent the potatoes heating.



At the recent flower show of the Royal Horticultural Society the carnation was a strong rival to the rose, and its beautiful blooms charmingly staged were admired with keen delight by lingering groups of visitors. We were particularly struck with the difference in artistic effect between the Dublin exhibits and the London ones, as shown at a recent exhibition in the Horticultural Hall at Westminster. Instead of the graceful effect produced by displaying the cut flowers in vases, whereby their natural beauty of free growth and delicate shades of colour were emphasised, the London exhibits were degraded and shorn of all those attractions that flower-lovers really admire by being each put in a paper collar and their stems stuck deep into holes in ugly green boxes set in formal rows, as unsightly as they were silly, and entirely unworthy of a Carnation Society that calls itself "National."

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IRISH GARDENING

VOLUME V.
No. 56

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

OCTOBER
1920

Bacteria in Relation to Crops.

II.—NITRIFICATION.

By PATRICK DUFFY, Associate of the Royal College of Science for Ireland.



SOIL fertility depends to a great extent upon the activity of certain races of bacteria. As shown in a previous article (page 81), the ammonification changes that take place in the soil are entirely due to

bacterial action. Nitrification is another and equally important factor in sustaining the fertility of the soil.

Ammonification is closely allied to nitrification, indeed the latter is the complement of the former as we shall endeavour to show. As has been explained in the article already referred to. Ammonification is the breaking down of complex nitrogenous matter into ammonia. Nitrification is, on the other hand, a building up process, whereby the ammonia is converted into nitric acid and thence to a nitrate. In a nitrate the nitrogen is in a form easily soluble and most readily available as a food material for plants. Hence, any process or agency that can change the unavailable nitrogen in the soil into a form that can be made use of by plants, is deserving of the attention of the crop raiser. Such a process is going on constantly in most soils, so that the amount of nitrates in such soils will increase if not removed by plants or washed away by

drainage. When it is remembered that nitrogen is the most costly element of artificial fertilisers, and that in the form of a nitrate it is most readily made use of by crop plants, the importance of this process of nitrification may be realised. We have next to consider how the process is brought about.

The building up of nitrates from ammonia is a bacteriological process. It is effected by minute organisms which are natural to the soil, and are also found in large numbers in farmyard manure. There are certain conditions of food and environment which act advantageously—or the reverse—on these organisms, and a knowledge of these conditions is essential to a proper grasp of the many and complex problems of soil fertility. Although these nitrifying bacteria are present in most soils, their activity varies greatly in different soils. They are active where the conditions are favourable and inactive or only feebly active where the conditions are unsuitable. Unlike the ammonifying bacteria, they are prevented from carrying on their work in the presence of soluble organic matter. Farmyard manure when not well rotted contains considerable soluble organic matter, so that when added to the soil in quantity it checks the formation of nitrates, the nitrifying bacteria remaining inactive until the soluble organic matter is decomposed by the ammonifying and other bacteria which act on such material. When the soluble organic matter has almost all been decomposed the nitrifying bacteria commence to use up the ammonia

produced and to convert it into nitric acid, which unites with such substances as lime, soda, potash, &c., to form nitrate of lime, nitrate of soda, nitrate of potash, &c.

Acidity or "sourness" in a soil has an effect on the nitrifying bacteria similar to that produced by soluble organic matter. These bacteria require for their active growth and multiplication an *alkaline* medium, and are inhibited or stopped in their activity by an acid soil. An acid soil is made alkaline by the addition of a sufficient quantity of lime, and the increased fertility resulting from an application of lime to land is due, in great part, to the stimulation of the nitrifying bacteria which follows. This fact shows how important it is to lime land often and so prevent it from becoming acid.

A good supply of oxygen and moisture has been shown to be necessary for the growth of the nitrifying bacteria. They derive the oxygen from the air which permeates the soil and occupies the spaces between the particles. If these spaces be occupied by water, as in an undrained soil, or the particles be so closely pressed together as to diminish the space-volume, as happens in a stiff clay, it is clear that the supply of oxygen to the minute organisms will be so limited as to check the work, if not to destroy them. Thus it will be readily understood that drainage promotes nitrification by removing surplus water and allowing air to enter and occupy the space between the soil particles, while enough moisture will adhere to the particles to satisfy the wants of the bacteria. Thorough cultivation and breaking up of the soil also assists by allowing a ready passage to air and water.

Nitrification is then an important process in the promotion of soil fertility. It is brought about by the agency of certain species of bacteria. These bacteria are found in practically all soils. They are not found in woodland, as the soil is here too acid, due to the decay of large quantities of leaves and other organic matter. They are checked in their action by the presence of soluble organic matter. Farm-yard manure should be well rotted before applying to soil, as in this state it contains little or no soluble organic matter. A "sour" soil acts adversely on the bacteria; hence, liming promotes nitrification by correcting the sourness. A good supply of oxygen and

moisture is essential for the activity of the organisms. As the oxygen is derived from the air, the soil must be well aerated. The aëration of the soil, as well as a constant renewal of soil moisture, is effected by good drainage and thorough breaking up of the surface layer.

Gladioli.

THESE handsome flowers seem to have become more popular of late; some handsome specimens and stands have been in evidence at the various horticultural shows this year, and undoubtedly the quality of the blooms was in advance of anything we have seen hitherto.

Some objection is raised to the large flowering variety, by "cut-flower" enthusiasts, on the score of "stiffness" and want of decorative value, but we venture to say that if used in large vases, in a *bold* style and in conjunction with Chrysanthemum Maximum, Gypsophylla or autumn foliage, there are few flowers can equal it in its majestic decorative effects. A really bold vase of such, in the corner of a hall or room, is something worth looking at, but if stuck in a small vase for table work it is a ghastly failure. Not so, however, with its *confrère*, the early or small-flowered gladiolus, than which few prettier or daintier subjects can be used for room decoration; indeed this is its one use, as the early varieties, unless in exceptional circumstances, are rather "lost" in the border. Both sorts are of the easiest possible cultivation, are very inexpensive, and so handsome that they are worthily very popular.

Early gladioli can be had in flower *almost* all the year round, with care, while the large-flowered late sorts only bloom for, say, three months at most.

Both varieties can now be had in a very large selection of shades of colour, and the handiwork of the hybridiser is evident in this as in most other flowers of to-day, some really exquisite results having been attained. Those who were privileged to see the handsome stands erected at the spring show of the Royal Horticultural Society of Ireland by Mr. Lilley of Guernsey and by Mr. Jones, of Gowran, at the autumn show of the same society, had an opportunity of judging the respective merits of the two varieties. We have already said that both are of the easiest cultivation, but while the early likes a sandy light soil,

the large gladiolus prefers a stiffer, deeper loam, and revels in good, rich, well-manured soil, only "objecting" when there is lack of drainage or stagnancy in any form at the root.

In "earlies," who does not know that favourite *Colvilli alba* (The Bride), and *C. rosea*, or Blushing Bride, but there are, in the newer sorts, some really magnificent colourings, amongst which we might name *Ardens* or Fire King, a blazing scarlet, with large individual pips; *Non Plus Ultra*, brilliant red; *General Scott*, white with red blotch; *Crimson Queen*, and many others.

In large flowering gladioli it is well nigh impossible to particularise; but we were much struck with *W. Falconer*, a delicious rich pink; *Cardinal*, very rich crimson; *Attraction*, crimson and white; *Princeps*, the largest gladiolus known; and *Baron Hulot*, miscalled a blue, being really a very dark purple; but the palm must be given to that deliciously soft, fresh pink *America*, as, in addition to its beauty of colour

and form, it is of a perfect habit, very stiff in stem, and never falls about in the border.

Just one word of advice ere we close. One is much tempted in these days of budgets and other disturbing innovations to be influenced by the price of things offered for sale. It is the age of cheapness, but in gladioli one can err on the side of cheapness, and err badly. "Mixtures" as offered by seedmen and others can be had at *very* low rates, but it is not to be expected that "exhibition" quality can be had

from a mixture at 1s. a dozen, while it certainly *can* be had at prices ranging from 2s. 6d. upwards.

"JAMES."

Hæmanthus Katherine.

HÆMANTHUS KATHERINE is a distinct and lovely bulbous greenhouse plant which grows about three to four feet high and throws its heads of large scarlet flowers well above the foliage. The stems of both flowers and foliage are

covered with dark spots, a character which adds considerably to the attractiveness of the plant. The genus *hæmanthus* thus belongs to the *Amaryllis* family. It includes sixty species, all of which are South African.

One very important item in the successful growing of the *hæmanthus* is the drying off process, which must be carefully attended to. After they have finished flowering all the old flower stems must be cut away and the plants stood in a light and airy position. Plenty of water must be given, and once or twice a week a good soaking of liquid manure. As soon as the plants show signs of going to rest, feeding must be stopped, and then the plants gradually "dried off." In my own practice I never entirely withhold water. I usually give them one good soaking of clear water once

a fortnight all through their resting period. Before new growth commences they must be repotted in a mixture of good loam, leaf-mould and sand, adding some well-decayed cow manure. On shifting the plants as much of the old soil as possible should be shaken away, taking great care not to injure any of the large fleshy roots. Pot fairly firm, place the pots in a warm temperature until they have made some growth; they can then be moved into a cool greenhouse. The illustration shows a group of *Hæmanthus Katherine* grown at Blackheath. Most of the bulbs are three years old.

WM. CAMPBELL.

The Gardens, Blackheath, Clontarf.



Photo by]

[Wm. Campbell

A HANDSOME GROUP OF *HÆMANTHUS KATHERINE* GROWN AT BLACKHEATH GARDENS, CLONTARF.

Native Dye Plants

DURING a recent visit to the west of Ireland we were much interested in the method of dying home spun wools with dyes extracted from different plants—mostly lichens—growing in the district. As most people know the introduction in the eighteenth century of foreign dyes possessing higher commercial advantages rapidly displaced the vegetable dyes peculiar to the country, and it is only along the western seaboard that the old fashion still lingers of using native plants. Many of the shades of colour obtainable by the use of certain plants are distinctly artistic, and it may interest many of our readers to know of a few more or less common plants that may be used for this purpose. The mordant is commonly boiled with the wool, and the plant used is alum, which not only brings out the colour but fixes it in the fabric of the wool. Pale yellows are given with the leaves of pear, plum, birch, and willow, also with the sweet gale of bogs and the redshank (*Persicaria*) of cultivated fields. The yellows produced can be darkened by the addition of alkalis (potash or ammonia). The ragwort, whose yellow flowering heads are so conspicuous in many pastures, also yields a fine yellow, but the best yellow is that obtained from weld or dyers' mignonette (*Reseda Luteola*). This latter plant was a great favourite with dyers in dying wools green. The common corn marigold (*Chrysanthemum segetum*) gives a deep yellow approaching orange. Browns of different shades are yielded by several common plants. Alder bark, with different proportions of alum, gives varying tints of red, and with coppers various shades of black. Practically similar colours may be obtained from the bark of oak and birch. Beautiful yellow-browns may be got from ling, one of the commonest of our heathers, and a fine, rich russet brown from the lichen, known as *Sticta pulmonacea*. Various species of another lichen genus (*Parmelia*) yield charming shades of crottle browns. Fresh walnut husks and the rhizomes of the white water-lily give particularly rich browns; they require no mordants, and the wool is soft and delightful to the touch.

Greens may be obtained from the ripe berries of privet with alum and from the flowering tips of the common reed (*Phragmites communis*) with coppers. Very few native plants appear to yield good reds. The tormentil (*Potentilla tormentilla*) gives a dull red with alum, and the fresh inner bark of birch gives a slightly brighter shade. Woad (*Isatis tinctoria*) is the only plant giving a blue colour. It is said that the best green is that produced when the wool is first dyed with woad and then "topped" with weld. A large number of interesting experiments on this subject was carried out some years ago by the late Dr. Plowright, and although vegetable dyes have long ceased to be of much economic importance his results are well worth our careful consideration.



Crowns for kings' wearing, gems for all men's sharing,

Rubies from the rowan trees, diadems of dew;

Thorny gorse for golden thrones, tapestries of brown fir cones

Gifts of price were these from winds that blew.

Current Topics.

By C. E. BALL, Royal Botanic Gardens, Glasnevin.

IT is a recognised fact in gardening that by burning soil its fertility is subsequently increased, although for a short time after the burning its fertility may be lessened. Some cucumber and tomato growers who have difficulty in getting new soil every year make use of this knowledge, and will sometimes bake their soil instead of changing it. At the British Association's meeting at Sheffield in September, Dr. E. J. Russel detailed some interesting facts and theories bearing upon the important subject of soil fertility. Drs. Russel and Hutchinson have been conducting a series of experiments at the Rothamsted Experimental Farm. They find that crops benefited greatly when the soil was first heated to a temperature of 70 degrees to 100 degrees for two hours, while treatment for forty-eight hours with the vapour of toluene, &c., followed by a complete volatilisation of the antiseptic, brought about an increase of 30 per cent. or so in the crop. Moreover, after analysis the plants were found to have taken up larger quantities of nitrogen and other foods from the treated soil, so that the increase of the crop must be due to greater supplies of plant foods in the soil and not to mere stimulus. Most of the foods in the soil are made suitable for the use of plants by beneficial bacteria in the soil, and Dr. Russel maintains that the partial sterilising of the soil only destroys some of these bacteria, but entirely destroys hitherto unsuspected but larger organisms in the soil which feed upon the living bacteria. So it seems that these larger injurious organisms are more easily destroyed than the smaller beneficial bacteria. After the soil was watered and left for a time the bacteria increased to a degree that was never attained under normal conditions.

The prize essay on profitable fruit growing by John Wright is a small but well-known book, sound and reliable in its teaching. It should be in the hands of all interested in fruit, for it can be obtained for the sum of one shilling. In the ninth edition now published the selection of varieties has been revised and brought up to date, their suitability for the purposes indicated has been confirmed by the leading experts. A short chapter on fruit growing in Ireland is included, and on page 100 an interesting example is given where an old orchard in Co. Roscommon, three acres in extent, produced a crop of apples which realised only £4 10s. The old trees were headed back, grafted with that splendid apple Bramley's Seedling, and after three years from grafting the crop was expected to realise £100, a really fine example of renovating an old orchard.

The photo shows a good specimen of the double white annual larkspur, sometimes known as the stock-flowered larkspur. Along the borders at Glasnevin they have been greatly admired throughout the season, and are still in flower. They are of a tall branching habit, growing three to five feet high according to culture, and can be obtained in various colours as white, pink, carmine, or violet. For supplying cut flowers they are also of great value. These colour forms are varieties of *Delphinium consolida*, and should not be

confused with the varieties of *Delphinium Ajacis*, a better known but far inferior annual. At Glasnevin the seeds are sown in October in a box in a cold frame. About February or March they are ready to be transplanted two or three inches apart in other boxes, and by the end of April they are hardened off and planted out separately twelve to eighteen inches apart. Another plan is to sow thinly in the open ground in April, keeping the seedlings thinned out, eventually leaving them twelve inches from plant to plant.

Some *Godetias* and *Clarkias* which were given the same treatment as the annual *Delphiniums* have done particularly well this year. Some of the new forms of *antirrhinums* are very gay just now, while other flowers are fast disappearing. Orange King, Golden Chamois, Pure White, Coral Red, Carmine Pink are among the best varieties. To flower well through the summer the seed should be sown in September or October, or in heat in January.

The flowers of the *Colchicums* are welcome even though they indicate the time of the year so well. *C. Bornmulleri* is the first to open, but the best two *Colchicums* are the Caucasian *C. speciosum rubrum* and the beautiful white variety *C. speciosum album*.

Mr. Briscoe, an old Kewite, has had the honour of raising the first hybrid of *Primula bulleyana* for Messrs. Veitch and Son, the other parent being *P. japonica*. The hybrid is said to have the habit of *P. japonica* with flowers similar in colour to those of *P. Unique*.

Switzerland added school gardening to the curriculum of their rural schools about ten years later. America, with the able guidance and inspiration of Prof. L. H. Bailey, has made rapid strides in the teaching of nature study by means of school gardens.

We in Ireland hope to have school gardens attached to many of our national schools before very long, and it behoves us to enquire how we can obtain the greatest possible educational benefit from them.

"No instruction without observation" should be the keynote of the work in the school garden. Its aim must be something higher than to turn out the pupil a dexterous garden labourer. In the nature of things it cannot hope to make him an expert horticulturist, but it can teach him the essentials for the good cultivation of garden crops, and, what is more important, it can develop in him the power of observation and the ability to draw proper conclusions from what he sees.

Yet another object can be attained by the school garden if rightly used; it can stimulate in the child an intelligent interest in the common objects of the countryside—the plants, the trees, and the animals. It should encourage, as Herbert Spencer puts it, that "instinctive inclination which every child shows to observe natural beauties and investigate natural phenomena."

Working on these lines the underlying principles of every garden operation should be explained to the child before he performs it. He should never be allowed to work mechanically, not understanding the object of the work which he is at. He must be taught to notice the plant forms and structures which he meets in the garden, and their uses must be explained to him. A labourer might grow a bed of onions without in the least understanding the nature of a bulb or its use to the plant. The benefit he would derive from growing the onions would then simply be equal to the edible or market value of the produce; but if the growing of onions is to have an educational value as well the grower should seek to know what a bulb is, and why a plant produces it.

The autumn is now with us, and a few notes as to the



Photo by]

DOUBLE WHITE ANNUAL LARKSPUR

In Royal Botanic Gardens, Glasnevin

[C. F. Ball

School Gardens.

MOST Continental countries have recognised the importance of school gardens as a means of instruction in rural science, and have adopted them in conjunction with their elementary schools. So long ago as 1870 Austria-Hungary made it compulsory for every national school to have a garden attached, and Sweden quickly followed suit. Belgium, France, and

subjects of study in school gardens might be useful to those who are already engaged in the teaching of rural science.

Besides the routine operations of a garden at this time of year, which will be found detailed elsewhere in this paper, there are many interesting things to note—the various forms of fruit produced by plants and the arrangement of the seeds in the fruit; the way in which the different fruits open and their seeds are distributed; the winged fruits of some trees (ash, sycamore, and elm) and the silky hairs on the fruits of many composites are interesting structures to facilitate seed dispersion. Collections of weed seeds might be made by the children.

The region in which plants store their reserve food should be noted, and the structures of the various storage organs—roots, rhizomes, bulbs, tubers, and corms—compared. Later on the fall of the leaf will afford an interesting study.

G. O. SHERRARD.

Autumn Manuring of Fruit Trees.

"It is indispensable that every plant should find in the soil in which it grows those inorganic constituents which nature has rendered necessary to it."—Lindley.

AS fruit culture is now so rapidly extending in this country, and as the intelligent manuring of fruit trees is a factor of great importance in the management of an orchard, a chapter upon manurial treatment will doubtless be useful to many of our readers. The kind of manure as well as the quantity to apply will, of course, depend not only upon the nature of the soil but also upon the character of the trees. But even so there are certain fixed principles applying to all soils and all kinds of fruit that ought to be well understood by growers, and it is these principles rather than precise details that we are at present anxious to explain.

The soil, it should be remembered, is not simply a mass of inert matter; it is, in fact, a great natural laboratory in which things are being constantly changed under the influence of air and bacteria. The changes of importance to cultivators are those that result in the formation of compounds required in the nutrition of plants. With the exception of carbon the soil supplies the plant with everything it requires in the way of food. "With good reason the soil is called mother," says Lucretius, "since all things have been produced out of it."

It is a well established fact that under natural conditions soils have the power of maintaining their fertility, but when subjected to systematic cropping a large quantity of material removed by the crop is taken away from the soil and, hence it is made poorer by just so much. For example, a ton of apples will remove about nine pounds and a ton of grapes as much as forty-six pounds of minerals from the soil. Some of these minerals are plentiful in soils, while others are relatively scarce. Those that are necessary and scarce are, of

course, the most important from the cultivator's point of view. As a rule, only two minerals are valuable in this restricted sense—these are potash and phosphoric acid. In addition to minerals the soil supplies the plant with nitrogen either in the form of nitrate or a salt of ammonia, and these available nitrogen compounds are, as a rule, also present to a limited extent. These are only general rules, however, and do not apply to all soils. For example, many clays are particularly rich, in potash while other soils may have quite an exceptional amount of either phosphatic or nitrogenous compounds. It follows, therefore, that whether any particular kind of fruit tree growing on any particular kind of soil will benefit from the application of any particular kind of manure can only be discovered by experiment. Hence one of the very first things a fruit grower should find out is the name of the particular food element that his orchard land is weakest in, as it is that element that will most of all determine the natural fertility of the soil and the weight of the crop. The first principle then in manuring is to supply such essential food substances as the plant needs and the soil itself fails to supply in sufficient abundance to the growing crop. A gardener can only find this out by trials. It is easy, for example, to try the effect of, say, a potash salt upon a young apple tree, and note if it makes any difference between it and a similar tree from which potash is withheld. By a number of intelligently planned trials a good deal of valuable soil knowledge can be gained in a few seasons.

The composition of different kinds of manures and their respective physiological use to the plant are matters that ought, of course, to be clearly understood. Some manures supply only one kind of essential substance—nitrogen, phosphate or potash—while others contain two or, as in the case of guano or farmyard manure, all three. These latter are called complete manures. As to the influence exerted by the different kinds of manurial substances the following facts should be remembered:—

Nitrogen tends to increase the growth of root, stem and foliage. It therefore encourages shoot production, and is useful in the case of trees that are stunted or otherwise, not making good growth, but ought not to be given in cases where trees are already making too much "wood." It is wasteful to apply nitrate or ammonium salts in autumn, as being very soluble they will get washed out during the winter rains. Spring is the best time, as roots have then a difficulty in getting a sufficiency of nitrate until the soil gets warmer and nitrification begins with the advance of the year. Some discretion is needed in the use of nitrogenous manures, as an excess may be harmful, and especially so if there is a lack of the necessary minerals. Furthermore, an excess renders a tree more susceptible to disease.

Phosphates, unlike nitrogenous manures, encourage sturdy growth and the development of flower buds. They also tend to improve the quality of fruit. Very few soils are overstocked with phosphates, and fruit growers can hardly err in applying phosphatic manures to their trees. Of artificial manures supplying phosphorus the three commonest are superphosphate of lime, basic slag and bone meal. For clays basic slag is

the best, as it contains a good deal of lime. It ought to be applied in the autumn or winter and well mixed with the surface soil. Superphosphate is better for light lands, and may be hoed in at any time of the year. Bone meal when used should be applied in the autumn.

Potash is of an all round utility in plant growth and is of particular service to fruit trees. It assists in the assimilation of food and in the formation of buds and the development of shoots. It also aids in flower and fruit production. In addition to these functions it keeps up the general health and vigour of the tree, and so helps the plant to resist disease. Light soils are especially benefited by the application of potash salts.

action and bone dust more lasting because it is slow to dissolve. It is impossible to give specific quantities for an autumn mixture as so much depends upon the nature of the soil and the character of the trees. It is advisable as a general rule to add, say, about a third more phosphatic manure than potassic in the mixture. In order to give "backbone" to a soil many fruit growers include a little bone meal. After the mixture is scattered it ought to be lightly worked into the soil with a fork and the surface mulched with a little "long manure." If fruit plots are systematically treated in the way suggested the grower will be amply rewarded for the expense and trouble by healthy trees and good crops of sound, high quality fruit.



From a photograph by]

[W. Winstanley

A STRIKING GROUP OF *YUCCA FILAMENTOSA FLACCIDA* (ADAM'S NEEDLE)

Growing on the banks of the River Liffey, in the Grounds of P. La Touche, Esq., D.L.

Kainit (a mixture of potash, common salts and magnesia) is the form in which potash is applied to fruit trees. It should, if possible, be applied (in powder form) in the autumn or winter, so that the sometimes injurious impurities may be removed by the winter rains.

A complete manure—that is one supplying the soil with all the essential ingredients necessary for the feeding of fruit trees—would be one made up of a phosphatic and potash manure applied in the autumn to be followed in the spring with an application of a nitrogenous salt. The quantity to apply may be at the rate of about three or four ounces per square yard. As basic slag contains free lime it is the best kind of phosphatic manure to work into clay soils or in light land deficient in lime. Superphosphates are quicker in

Value of Poultry Manure.

ALL the sweepings from poultry houses and runs should be carefully preserved, as fowl dung forms a most valuable manure for almost all kinds of plants. It may be used as a top-dressing for either fruit trees or vegetables, using about a pound weight to each square yard, and lightly but thoroughly raking in. A most stimulating potting soil for all soft-wooded plants may be made by intimately mixing the full contents of a seven inch pot of this manure with a barrowful of compost. Again, it is capital stuff for the making of liquid manure. A bushel of it loosely tied up in a sack and steeped for several days in about fifty gallons of water will give excellent results.

Alpine Flowers and Gardens.*

By H. STUART THOMPSON.

NOTHING is more indicative of the rapidly increasing fashion for making rock-gardens, and growing Alpine and other hardy plants than the rapidity with which books on the subject have been published of late years. One of the most attractive and original of all these is the charming volume on "Alpine Flowers and Gardens," painted and described by George Flemwell. It is in the well-known series of beautifully illustrated books published by Messrs. A. & C. Black.

Mr. Flemwell is an extremely able painter, whose figure subjects attracted attention years ago at the Royal Academy in London and on the Continent; but his genius does not end there, for his sketches of Alpine scenery compare well with those to be found in any country, while his drawings of Alpine flowers and fungi, which we were privileged to see in Switzerland, are the most accurate in form and brilliant in colour we have yet set eyes upon. The pictures reproduced in the book are of plants growing *in situ*, frequently set amidst some majestic, snowclad mountains, and for that reason the flowers are necessarily small, but their form and colour, together with their habit and grouping, are so natural that the species of most can be recognised at once.

The author is a poet and philosopher as well as an observant naturalist, and therefore his very artistic book should appeal forcibly to the Irish temperament. It does not pretend to be a book on botany, nor on gardening: it is rather an *ensemble*, and it forms a delightfully sympathetic account of the Swiss Alps and flowers and of the mountain gardens, written by one who has long lived amongst them and who knows them in all seasons and in all weathers. The book appears to have hit what is called the "public taste," and that was the aim of both author and publisher. May this be

remembered by critical botanists and by zealous horticulturists; and yet there is much interesting information here which no botanist and no gardener should be without. In Great Britain, if not in Ireland, there are too many botanists who seem satisfied with handling dried plants in an herbarium or in dissecting spirit material in a laboratory, and too many gardeners who get accustomed to seeing Alpine plants cultivated in unnatural conditions, sometimes in greenhouses, where many of

them assume forms more or less unknown in their native haunts.

The introduction is appropriately written by Monsieur H. Correvon, of Geneva, than whom there is no better known authority on the subject of Alpine gardens, three or four of which he was the first to start in the mountains, and of which he still has the directorship. As the author of several books on the Alpine flora, Mons. Correvon was eminently fitted to write a preface to such a book as this, and it is in keeping with the novelty of the work that his remarks should be left in French, a language so often spoiled by being translated. He truly says—"The Alpine flora has never yet been described nor offered to the public in such a form. Here then is profoundly original work, which lovers of beauty and truth cannot but applaud."

The twenty illustrations are well reproduced in the three-colour process. They are about a quarter the size of the originals, which were recently on exhibition at the Baillie Gallery in London, where, we understand, examples of the artist's work can always be purchased. Several of the most beautiful views were taken in spring, and they cannot fail to bring back pleasant memories to all who have seen such sights in the Alps in spring, before the annual rush of tourists takes place. Only those who have lived throughout the year in the Alps can fully appreciate the chapters on "The Rival Seasons" and "Spring in the Alps," for "all this and much more are missed by the majority of visitors, who arrive perhaps in time to see the fast-fading blossoms of the rhododendron."

It is in spring that one sees the hepaticas in the woods and the *Scilla bifolia*, which takes the place in



MR. FLEMWELL PAINTING IN THE LINNEA GARDEN AT BOURG ST. PIERRE.

* "Alpine Flowers and Gardens," by G. Flemwell. London: A. & C. Black. 7s. 6d. net.

Switzerland of our bluebell; it is then that the anemones and primulas and gentians are at their best, though, of course, in higher altitudes they linger on till after mid-summer. Again, it is in April and May that as soon as the melting snows expose the dull brown sward, it gets carpeted with millions of blue and white crocus and the delicate mauve bells of the Soldanella. Well may our author-painter say he knows "no more dreamlike or inspiring sight than when in early spring-time the mystic Alps, ridding themselves of their superfluous snows, are thundering down avalanches over their mighty crags and cliffs, and yet the while, in the tranquil, grassy foreground lies a lovely new born wealth of Soldanella." All these April scenes are wonderfully portrayed in a series of exquisite views. Nor are the marsh marigolds forgotten, keeping company with the bright pink *Primula farinosa* and the dull yellow *P. elatior*, with the Argentine peak towering in the background. The drawing of *Gentiana verna* and the *Glacier de Plan Nèvé* reminds one of the unrivalled work of Edward Compton both in its accuracy of detail, its atmosphere and colouring.

The series of views painted in summer comprises pictures of the Thomasia garden, the garden on the summit of the Rochers des Naye, the second highest in Europe, and the beautiful *Jardin de la Linnea* at Bourg St. Pierre, that last quaint village on the Swiss side of the Great St. Bernard Pass. We give a photo of Mr. Flemwell painting in the *Linnea* Garden, where three thousand kinds of plants from various parts of the world can be seen flourishing in the midst of scenery which itself is worth the long tramp up the dusty road to see.

Another beautiful drawing gives the combination of blue gentians and pink *Silene acaulis*. The scene of this and several charming views of flower-bedecked pastures ready for the scythe is laid at the Col de la Forclaz, between Chamonix and Martigny, a spot our artist loves and knows so well. The last picture in the book, a September idyll with Apollo butterflies hovering over some tall, hillside thistles in front of the *Aiguille du Tour*, is a gem of ethereal colouring, and it reminds us that our friend is an ardent entomologist also.

Space does not allow us to say more about the letter-press, which is instructive and yet so readable. Those who wish information about the colours of Alpine flowers, their habits and characteristics, &c., cannot do better than get this attractive volume for themselves. It is not impossible that in reading it they may be led to think of theories in regard to the remarkable distribution of certain Alpine plants in the west of Ireland, and particularly to the fact that not a few in the Emerald Isle descend to the level of the ocean, while they reappear on the summits of the highest Scotch mountains, and are often found at more than twice that height in the Alps.



In rose-time or in berry-time,

When ripe seeds fall or buds peep out.

While green the turf or white the rime.

There's something to be glad about.

Chrysanthemums at Clontarf.

CLONTARF! When the name is mentioned we think of the eager curiosity of a boy seated on the sea-wall who shyly asks a friendly passer-by if this is the place where the battle was fought. Yes. Here the Gael overcame the Gaul. Out there on the tide the Norse galleys rode on Good Friday, 1014. Here the Northern men made their last stand before they broke to their ships. The hope of a supreme dynasty for Ireland ended in that Irish victory. Brian died here, his son and grandson having perished in the battle.

"And where are the Chiefs with whom Brian went forth?"

The never vanquished sons of Erin the brave;

The great king of Onaght, renowned for his worth,

And the hosts of Baskin from the western wave."

Ships are out on the tide to-day, but they are ships of merchandise, not of war. The industrial side of the city is seen from here, with its wharfs and warehouses, its factories and tall chimneys, from which the grey smoke streams lazily in the quiet air. Clontarf is now a nexus of industrialism, the trains to and from the north rumble past, and the whirr of electric cars beats the air with ceaseless monotony. The promontory and the hills are as of old. Before us is the outstanding peak of the Golden Spears, now miscalled the Sugarloaf. Beside us is Howth—Ben Edar of old—"Clear head over sea of gulls," as the Ossianic poem described it. Here on the margin of the bay and on the outskirts of industrial Dublin the Messrs. Watson have established a thriving nursery from which plants are distributed to thousands of Irish homes. Surely the peace for which Brian strove so bravely is symbolised in its broad acres of carefully-tended beds, full of young plants destined to meet the requirements of a people awakening to the delights of gardening.

Our attention was mainly directed to chrysanthemums and carnations. The chrysanthemums here are interesting not only with regard to varieties grown but also because they are allowed to grow naturally and as they will.

Amongst the old favourites Horace Martin was a glow of yellow, and one could not fail to be struck with the new French kinds which are coming to the front in a remarkable manner; perhaps together with the several *Marie Masse* varieties none are more handsome or useful. Specially noticeable are some lovely new pink early kinds with broad solid flowers, produced erectly and plentifully on plants of compact and sturdy habit. Few of these exceed a couple of feet in height, and they are exquisite garden decorators as well as being delightful for cutting in September and October.

Amongst the earliest pink kinds of outstanding merit we must include *Normandie*, a charming soft pink of dwarf habit, with broad petals and of great size; *James Bateman*, a deeper pink, capital in habit, shape, and size; *Provence*, a large, smooth, coral pink, with gold centre, a lovely thing; and *Mignon*, a taller kind with large flowers of pale rose or mauve. In white varieties few are superior to *La Parisienne*, with elegant feathery flowers in wonderful profusion;

Savoie, a new snow-white of exceptionally bushy and dwarf habit; and Esperance, which has large white flowers with a greenish centre, and all borne on extra long stems. Cream colours are well represented by Stella and Market Yellow.

A new shade in outdoor chrysanthemums is La Gironne, with large shaggy blooms of a vieux-rose colour which especially appealed to us. Yellows are numerous, but reference must certainly be made to Miss Balfour Melville, deep yellow with old gold tips; the flowers are extra large, and on plants of an ideal dwarf habit; a really lovely variety, reminding one in many points of the glorious indoor December yellow Nagoya. Chatillon is another beauty, orange and ochre yellow, with straw-coloured reverse, and there is the pure Elstol Yellow which comes in before the ever popular Horace Martin.

No early crimson for outdoors can rival Goacher's Crimson, now well known, but there are some pure bronze and bronzy-crimsons which no one should be without, such as Diana, deep bronzy-orange, shaded with gold; Tottie, a mass of medium-sized flowers of the most charming reddish orange and yellow; Agnes, salmon-brown flowers of great solidity; and Harrie, also an extra large bronzy-orange of lovely colouring. All the foregoing are first early kinds, and average one-and-a-half to two-and-a-half feet in height, with the exception of Mignon (three feet). We also saw a collection of the new single early-flowering chrysanthemums, and specially noted Gem of Merstham, crimson; Surrey, salmon cerise; Juno, yellow; Prince, deep rose; Dr. Ingram and Dominion, terra cotta and salmon. These are all of dwarf habit, and as they flower profusely, will be more largely grown when better known.

The Best Single Dahlias.

SINGLE DAHLIAS are certainly coming into favour, and deservedly so, as they produce very striking colour effects, especially when grown in clumps. To many people they offer a greater attraction than the show, fancy, or even the Cactus type of flower. The dahlia (named after the Swedish botanist Dahl) is a native of Mexico, and cannot, therefore, survive our north temperate winters. The first plant was introduced about one hundred years ago by the Marchioness of Bute, but was soon lost. It was reintroduced early in the last century, but little account was taken of it at the time. Later, however, their variability being discovered, they were taken in hand by various horticulturists, and soon acquired great popularity in gardens. Being members of the Composite family the "flowers," popularly so called, are really heads of tiny flowers surrounded by an enclosing whorl (or in the present case a double whorl) of bracts called the involucre. The flowering head in a dahlia shows a central disk of tubular florets with an outer circle of strap-shaped florets forming the "ray," and this primitive structure is retained in the "single dahlias" of gardens. The disk florets in the wild plants were yellow and the ray florets some shade of scarlet, but under garden cultivation the former gradually took on not only the colour of the latter but

their form of structure as well, and it is this particular change that produced the falsely described "double" flowers of dahlia.

While these "doubles" are still admired by many a change is certainly taking place in public taste, as is evidenced by the large number of different kinds of "singles" that are now raised and distributed by florists. They are undoubtedly grand flowers for autumn display in herbaceous borders.

Last year the National Dahlia Society, anxious to discover and list the best singles now in cultivation, arranged an extensive trial, and Messrs. J. Cheal and Sons offered to carry it through at their nurseries at Crawley under the direction of the society. The trials have been very successful and the results most interesting to dahlia lovers. The committee appointed to report inspected the plants on the 13th of last month. The beds presented a glorious show of colour, and strikingly demonstrated the great value of "singles" as decorative subjects. Taking into consideration the stem, peculiarity of flowering, habit of plant, and general appearance of growth, the following varieties are, in the judgment of the committee, the best for garden purposes:—Amy, Lady Bountiful, Winona, Owen Thomas, Columbine, Fugi San, Kitty, Leslie Seal, Miss Moreland, Miss Roberts, Peggy, Rosebank Scarlet, Butterfly, Snowdrop, Vesuvius, Cardinal, Mrs. Joynson Hicks, Rosy Gem, Mrs. W. Hood, and Morning Glow.

Real Border Carnations.

AMERICA has given us such perfect varieties for culture under glass that the greatest want nowadays is a collection of good garden carnations, varieties which flourish outside from year to year, produce an amount of good, healthy "grass" for layering, and give large flowers, and plenty of them, on stout, erect stems. I fear many people are disappointed with the results obtained from planting out the lovely border carnations one sees at English shows, as they have been grown under the glass, and are often improved for garden culture.

This little article, therefore, deals exclusively with carnations grown in the open air all the year through. Given the qualities already enumerated, perfume is a highly desirable addition, and in the new "Dublin Pink"—here illustrated at the Editor's request—we have a delightfully clove-scented, real border carnation. It was greatly admired when staged in various centres for the first time this year, and as the stems and foliage are of the most robust character it will prove a favourite amongst those who love carnations in the garden. It is described as closely resembling a first-rate pink American carnation flourishing out of doors, and this is high praise, as few border varieties possess the size, colour and fragrance of a good tree carnation.

The new Countess of Aberdeen (so named by permission of her Excellency) is one of the finest yellow-grounds for outside growth. The flowers are extremely full, large, and symmetrical, and produced on good stems.

Lord Carew is remarkable for its vigour, this year having produced an average of ten full-length

flower shoots from the base of each plant, and all loaded with flowers. It is a new fancy carnation with bold, scarlet flakes on a light ground. Both the two last named received awards of merit from the Royal Horticultural Society of Ireland. Amongst the most satisfactory yellows this year was Gwen, which is of a very charming primrose shade, and it flowered well despite rain and wind.

Mauve and lavender kinds are now numerous, and this season none excelled Lady Cory, for although the blooms are not over large the stems, habit and colour are excellent, and even during the worst of weather this variety could be cut in abundance with the longest of erect stems.

Everything promised well here for the now past flowering season until the weather broke with a thunderstorm in mid-August, after which heavy rains and windstorms ruthlessly destroyed the finest blooms. It cannot, therefore, be said to have been a fortuitous season for carnations during the flowering time, but such weather is rare in August, and one must hope for better things next year. One of our principal exhibits was staged at the Royal Horticultural Show at Westminster on August 16th, and we must count ourselves fortunate in having saved good flowers for that show, as no later exhibition saw any really representative flowers from our grounds owing to the dreadful weather.

It is essential to layer and plant out a new stock of

young plants annually, as old plants are more subject to loss from disease than healthy youngsters, and now is the best time for planting rooted layers so that they may become established before wintry weather comes round. The ground should be well drained, as the

greatest number of failures result from fungoid disease engendered by planting in wet, low-lying beds. Drainage can be materially assisted by trenching and raising the beds during the operation, so that they may have a good fall towards the sun. Gritty material, such as old mortar rubbish, coarse sand, road scrapings, or burnt soil, should be dug in proportionately to the requirements of the natural soil, and a good top-dressing of fresh loam over the whole, or even immediately about each plant, is well worth supplying. For manure nothing can equal that from an old hot-bed, and even old manure should be placed below the top spit. Fresh manure should never be used.

It is well to keep a few layers in small pots, placed in

a frame, over the winter, as they will turn in to replace any failures by springtime, and there is little use planting out layers in spring unless from pots, as the roots of a carnation should never be disturbed after the new year. In districts where autumn planting is found inadvisable layers from pots should be planted out during fine open weather, as early in spring as possible.

Clontarf Nurseries, Dublin.

J. M. WATSON.

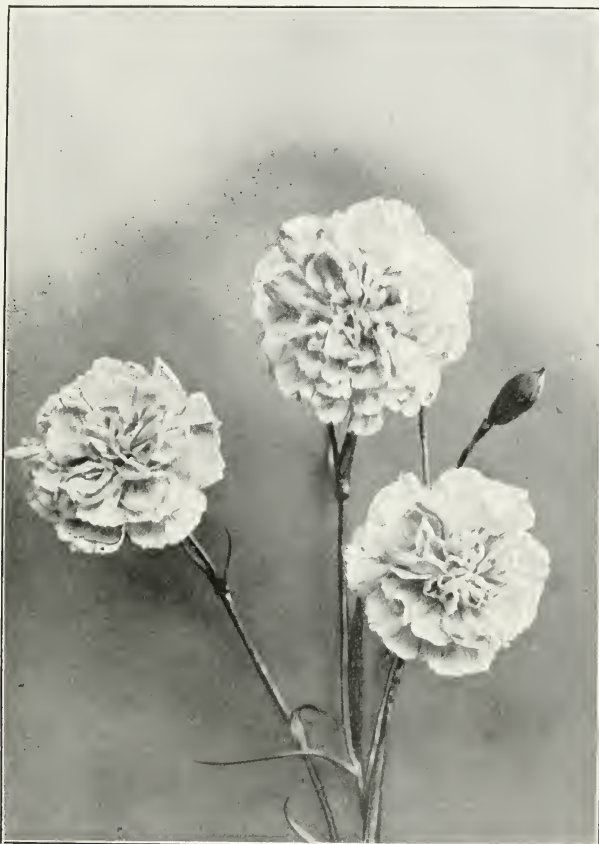


Photo by

CARNATION DUBLIN PINK.

[Watson and Sons.]

A new border carnation introduced by Messrs. Wm. Watson and Sons (reduced to rather less than half size). The flowers are comparatively large and numerous, with petals of a "lively pink" colour, calyx showing no tendency to burst. Flower stalks long and stout; growth vigorous; flowers fragrant.

Climbers.

AS autumn advances and vegetation passes into the rest of winter the garden-lover makes ready to carry out the schemes of improvement conceived during the progress of summer. Bare walls or fences, ugly corners, naked posts or tree stumps that spoiled the garden picture can now be attended to, and by judicious planting transformed into objects that, instead of detracting, will really add to the beauty of the grounds. This is the great use of climbers. Their rampant growth will soon cover in wild abandon all unsightly objects and be a source of never-ending pleasure to home lovers. Before me, as I write, is a mass of wild clematis covering an old fence and gateway with a glorious tangle of vines and hundreds of clusters of creamy flowers that in a few weeks time will pass into a grey cloud of tiny-plumed fruits. Nothing could be more satisfying; no art could make this particular corner more beautiful. In the same way every yard, garden and roadway could be made more beautiful by the use of climbing plants. Once planted they may be left alone so long as they are given an opportunity of clambering over some object rising up from the ground. All that is demanded of you is to provide them once for all with a deep, rich root run. This will give them a good start and enable them to repay you for your initial trouble. What can you plant? Well, there is an almost endless choice. The clematis we have already referred to is *C. vitalba*, the Traveller's Joy, but *C. montana* may be preferred. It is more decorative and makes prodigious growth (20 to 30 feet sometimes in a season), and is most beautiful when decked in its snowy, star-like flowers. This species will grow even among the branches of a living tree, deciduous or evergreen, and in every way is a delightful plant.

Aristolochia sipho (or Dutchman's pipe, from the odd shape of the flowers) is a good climber, its foliage being particularly handsome. It is a native of North America, and makes great growth in a suitable soil.

Jasmine is a well known climber, and entirely at home clambering through and over a hedge or thicket of shrubs. Its white flowers are deliciously scented. The winter flowering species *J. nudiflorum* is seen at its best against a wall or covering a bank or mass of bare rocks.

Honeysuckle is another common climber. For covering tree trunks, adding distinctive beauty to a hedge, or clothing steep slopes with its trailing branches, nothing better can be selected. Its perfumed flowers are produced in great profusion. There are several exotic species that may be used. The species *Syringantha*, for example, being very free-growing, and carrying trusses of fragrant, lilac-coloured flowers, is excellent for covering a trellis or post.

The blue passion flower is another favourite, and given a sunny corner it will grow with great vigour and produce in late autumn an abundance of bright orange, egg-shaped fruit. The genus *Vitis* supplies a number of well-known and useful climbers. Examples of these are the Virginian creepers, the foliage of which is so

gorgeous in the autumn. Some species, as *V. quinquefolia*, are tree-climbers; others, like *V. Veitchii* and *V. muralis*, cling naturally to the bare face of a rock or wall. Of the true vines *V. coignetiae* is, perhaps, the most ornamental. But the first favourite with many is the *Wistaria*, used so effectively by the Japanese. It is a most lovely plant in spring, with its graceful pendant racemes of sweet-smelling, lavender flowers. *W. multiflora* would be our own selection, but there are many other varieties.

Good useful climbers for special positions are Hop (variegated form may be had), Climbing Knotweed (*Polygonum baldschuanicum*) and *Tropaeolum speciosum* or Flame nasturtium. They are herbaceous subjects, but very rapid growers.

Lastly, the roses, of which we have many suitable climbing varieties. One wonders why our native wild roses are not utilised more for decorative purposes. What of *R. arvensis*, *R. brunonii*, *R. moschata* and others? Of nurserymen's varieties there are large numbers, such as the Crimson Rambler, Dorothy Perkins, William Allen Richardson, and that glorious rose, Irish Elegance, to mention only a few of the best known.

In this article we have intentionally only referred to plants which, although beautiful, are cheap (a shilling or eightpence will buy any one of them) with a view of inducing such of our readers as do not grow climbers to, at least, make a beginning this autumn. A final word as to method of planting. Avoid artificiality. Study the habit of wild climbers and give the cultivated forms the same chance to build up a living picture, as "Nature's unstudied effects, ever satisfying in their charm, are replete with suggestions for the rightful use of hardy plants in the wild garden, with hints of attractive associations, felicitous contrasts and refined colour schemes."

The Month's Work.

Flower Garden and Pleasure Grounds.

By E. KNOWLDIN, F.R.H.S.

GOING!—A summery summer followed by a commanding halt! in the early twenties of September, as Jack Frost breathes an icy blast over the tender bedders, and their heads are bowed with woe, is—dare we say it?—a boon and a blessing to the gardener. True, he growls both loud and deep (all good ones do), but we see a smile of satisfaction on the weather-worn face, as the barrel trundles out the wreckage, which belies it, and feel our *bête noir* of spring is at this season a blessing. As we write, however, friend Frost tarries; and even the now joyless geraniums would have us believe in their struggles to open a few pips they are straining at to make up for past misconduct, and crave respite; but all is vanity, and—and, out you go.

GONE!—Given dry weather and the beds cleared, both of which we hope will be evident as the postman fusses the October number of IRISH GARDENING into

the letter-box, and impresses its importance by an ultra uproarious rap (*plena*), the question of some or other of the good things of plant life crops up in order that some aids should be given to spring's efforts, and blessed is the man who has a good store of leaf-mould and well-decayed manure. Spring bedders are gross feeders and the wallflowers notoriously great robbers. The best example of wallflower culture, by the way, we see each spring in County Dublin, or in fact in any county or country, holds the secret of much cow manure within its bosom. This, however, is a matter contingent on circumstances; some find it more convenient to give a dressing when clearing off for the summer planting, but in any case it seems incumbent under the dual system of cropping that the flower beds should have their annual refresher, and that with no niggardly hand.

DIBBLE - V - TROWEL.—We have come to regard wallflowers as the *pièce de résistance* of spring bedding, so bright, so sweet, so coloury, and so generally satisfying are the improved varieties in deep gold, blood red, violet purple, and that pale Primrose Dame, which is struggling to become a white. We want a white, and we want a b—dier red, which doubtless our friends the florists will give us in time, for there is no limit to their efforts on our behalf; but we hope they will stop at Cactus kinds, for one never knows what freaks the florist and fashion are going to inflict. However, to plant what we have. The proper way, of course, is to lift each with a nice little ball and quietly pop them in bed; but after all the trouble and vexation of spirit, *cui bono*, when finding not a few splitting up at the last handling, parting with the soil and leaving their roots behind them. Ball practice is splendid in theory but foolish in fact. That, at least, is our opinion after a good many years at the work, and our practice, since we learned to do better, is to fork up the plants in a way in which the roots are taken and the soil

left, and insert them with a dibble, followed by a washing-in from the can spout, whilst a lot of worry, some bad words, and useless labour are avoided.

PRINCE AND PEASANT.—The wallflower has been called the peasant of the flower family, but we do not care what "they" call the dear, old, smelly thing. As a spring bedder it is universally and deservedly beloved, and there is nothing, or ever likely to be, to take its place. Still, it will stand the association of a little higher bred company and it is astonishing how the tulip is able to titivate it up. Golden Crown and red wallflowers, gesneriana and yellow wallflowers, picotee and red wallflowers again, and do not be sparing of the tulips, for they are cheap enough in all conscience and will do again, and again, and yet again! These combinations, of course, are all right, for no one thinks of putting red to red, yellow to yellow, and so on. The principle would be wrong. Nevertheless, wrong principles often spring from excellent motives, and if the motive is to produce one of the richest colour schemes imaginable, then let the principle go to the d—euce. We have in our minds eye, and pretty firmly fixed too, that big bed of blood red wallflowers flirting with the orange-red Prince of Austria tulips in the People's Gardens (Phoenix Park) last spring, and we strongly advise those getting a little tired of sameness in spring arrangements, and those who are not, to drop the principle for once and transgress all the ethics of art by doing likewise.

KINGS AND CROWNS.—We have never had much love for the Dutch hyacinth for bedding purposes, and various little things have led up to it, one of which is we would rather invest the amount spent on them in tulips, which, if they do not exactly go on for ever, will go on for some years with judicious handling, and our Dutch friend must hail from Holland each season, and the other reasons do not matter. Still there are pros as well as



VITIS COIGNETIE.

From a photograph in the Royal Nurseries of Hugh Dickson, Belfast.

cons for the pungently perfumed flower, and one is a decidedly distinctive feature, for, after all, the species available for this particular purpose are somewhat limited. Yet, if the thing is done at all it should be well done, and we have a lively recollection of a lady who allowed her gardener to spend a certain sum for bulbs and left the rest to him. With the laudable object of getting as much as he could for the "missus's" money our friend hied him to the auction rooms and got a "bargain"—all "prize bulbs" you know!—and what pleasure he had—in anticipation. Over the performance we may mercifully draw a veil, and over his "langwidge" too. To mention prize bulbs to him to-day is like giving a hungry dog a bite of his own tail. Having said rather nasty things about the Dutch hyacinth we honestly admit that, barring the Prince and Peasant bed in the People's Gardens, the great bed of King of the Blues hyacinth and Keizer's Kroon tulip in the same gardens was the most voluptuous thing in flowers we ever saw, and hope to see it again.

BRIGHT BORDERS.—A twinge of conscience tells us that midst all the gaiety of spring flowers we now enjoy by anticipation, the blues and purples of aubretias, the glitter of gold dust (*Alyssum saxatile*), and warmer tints of saponarias and silenes, not forgetting the forget-me-nots, our curriculum is—well, curious. "What are you going to tell us next month?" said a gardening friend (who will doubtless recognise himself). "Oh! just the flower garden, spring bedding, and so forth," we replied. Says he, "we know all about that, tell us something we *do not* know." Hence on his back be our backslidings, and this an apology for what is more suggestive than orthodox doctrine! But, to our borders, where we should like to see the stately Darwin Tulips more in evidence than generally met with. And what beauties they are when seen in clumps through the perennials with nothing suggestive of the transient bedders about them, for they seem to echo that poor, old, much-mangled brook of Tennyson's, and go on for ever! And they echo it truthfully, for they merely want to be permanently labelled as protection against Paddy when prodding through the borders in his tidying tricks, and the Darwins which we should like to see in clumps of a dozen, at least, are easily first as the gems of late spring in the borders.

FREEDOM'S OFFERING.—To add to the pleasures of the pleasure grounds bulbs should play a prominent part. It is here we want the daffodils, which would, of course, have been better planted a month ago, but better late than never if done at once. We have passed them over in connection with the flower garden, where, if one must have them, one must! but we are reminded of Wordsworth's words—"My heart with pleasure always fills and dances with the daffodils"—and we never can quite understand how any one's heart can go dancing over a whole bevy of formal flower beds where the poor things are set out like the wonders of Mary's garden, all of a row. Freedom, away from all this, is, to our mind, the birthright of the daffodil, without any suspicion of the planter's hand in evidence! And so, too, with crocuses under the trees, whilst the latter are bare, snowdrops and chionodoxa are the glory of the snow in the grass and under the trees, wherever the grass will grow and where it will not.

The Fruit Grounds.

By A. BARKER, Carrigroh, Newmarket-on-Fergus, Co. Clare.

THE gathering and storing of the later varieties of apples and pears will now need daily careful attention, and assuming that the preliminary preparations for storing have been duly carried out, granted a good or fairly good crop of fruit, this should prove one of the most pleasant operations of the whole year. The most important points to be observed in gathering and storing fruit at this season are, first, that the fruit may not be gathered before it is quite fit to be taken from the tree, and this condition is most certainly indicated by the readiness with which the apple or pear parts from the tree. Two or three fruits here and there should be tested, taking the apple or pear in the hand; give it a lift upwards or sideways, and if the stalk parts readily at the junction with the spur, then no time should be lost in gathering the fruits off such trees or varieties as are ready. Where big dense trees are to be dealt with or trees in unusually shaded positions, it is generally advisable to take, first, the ripest fruit, leaving the remainder a week or so longer on the trees to more fully mature. Do not be hurried or alarmed if a few fruits are dropping from the trees, and rush the whole crop into the fruit room. There is almost invariably an amount of fruits dropping prematurely through some malformation or imperfections, wind, &c.; but give each variety ample time to thoroughly mature on the trees, as most varieties, if gathered too early, commence to shrivel after being stored for a time, and so are very much reduced in value for either home or market purposes, and in dessert apples the flavour is much depreciated. Secondly, the fruit should be absolutely dry when stored in permanent quarters, but in some seasons there is considerable risk of high winds or gales doing much damage to the crop if it is left to be gathered from the trees perfectly dry; so if it becomes necessary to take the fruit in more or less damp or wet it is a good plan to place the fruit as gathered into shallow boxes or baskets, putting these boxes, &c., into an open shed or any place, where they can have plenty of light and air, for a few days to dry the fruit before storing away in permanent quarters. Thirdly, the fruit must be absolutely free from bruises or any form of damage when stored away, and to ensure his condition the greatest care must be used in picking the fruit and removing it to the fruit room, or wherever it may have to be stored away. If the above conditions are ensured, each variety may be relied on to keep sound to the full extent of its respective season, and the fruits (especially apples) may safely be packed away into much less space than is frequently supposed it should be allowed. Hard, late-keeping apples (such as Bramley's Seedling, for instance), where grown in great quantities, are frequently packed away a foot or eighteen inches deep (but any soft varieties should not be stored so thickly), generally speaking; for where there is ample room for storing, two to four layers deep is best for apples and pears. After fruit storing is completed no time should be lost in attending to the various needs of fruit trees or in making all preparations tending to ex-

pedite the coming planting operations, spraying, &c. Old orchard or other trees that are bearing crops of small, poor quality fruits, or trees that are weakly through inattention to their needs, over-cropping &c., may with great advantage be taken in hand as soon as cleared of fruit, with a view to their renovation. Saw out all dead and very weakly branches, also all branches crossing each other, and overcrowded branches; then give the trees a heavy mulching of rich farmyard manure five or six feet from the stems, all round the trees, or the surface soil may be removed down to the roots; and if there is any liquid manure available (the stronger the better) give the trees a thorough dressing of the liquid manure, and when this is quite soaked away replace the old exhausted earth with new, rich material filled up to ground level again; but if it is necessary to use the old earth again, improve it by a liberal addition of good rotten manure. A considerable improvement in the fruits will follow such treatment; a further improvement in the condition of the trees will be effected by winter spraying with a caustic wash to kill moss, insects, &c.

Fruit trees (old or young) that are growing a superabundance of gross shoots, and producing little or no fruit, should have this condition checked by root pruning or lifting. Trees too large to lift should be root pruned, but where lifting is at all practicable adopt this course, as by so doing the check to superfluous wood production is at once complete, and good crops of fruit more quickly follow than from root pruning. Root pruning may be commenced as soon as the foliage on trees shows the least change in colour. It is not necessary to wait until the foliage has fallen from the trees. Very large, old trees should be root pruned half way round one year, leaving the other half to be taken in hand the following year. Smaller trees may be root pruned all the way round at once. Commence by marking a circle round stem of tree at from two to three feet away from stem; then from the circle outwards dig a trench wide enough for a man to work in (about two feet wide will do); loosen the ground first with a five-pronged fork; all fibry roots must be preserved, cutting them at the outside of trench, and turn them back over the ball of earth left round stem of tree, tying them back if likely to be falling into trench and impeding work, but all roots as thick or thicker than, say, a man's finger should be cut clean away at inner side of trench; thus keep working round the tree and downwards. When the trench is a foot or more deep commence to gradually undermine the tree, and cut out all roots going downwards. The ball of earth round the tree must only be undermined half way through, and then have a quantity of earth rammed under this half of ball to prevent it tumbling or breaking away, and to keep the tree steady until the other half is undermined. After the undermining of the tree is completed, or it may be apparent that there is no more roots to cut, the trench must be refilled; but as the earth thrown out of such trenches is almost invariably in a condition unsuited to the needs of the trees, it must be brought into good order by the addition of rich, well-decayed, farmyard manure, or some previously mixed materials, such as new loam, manure, road scrapings and leaf-mould. If the subsoil is clayey,

pieces of broken bricks, old mortar, &c., at bottom of trench and half way up is a valuable addition. In the course of refilling the trench such fibry roots as were spared for relaying must be placed in suitable positions as the refilling proceeds, taking care that they are placed horizontally or with a tendency upwards rather than downwards. The earth should be well trodden and made firm all through.

If such root pruning is undertaken early in the autumn—the earth is rarely too wet for performing such work—the trees also much more readily recover from the effects of root pruning than if left until later on in the season. Be careful to leave a clean cut on severed end of roots to encourage more rapid formation of new roots. If a number of trees are to be root pruned it is advisable to mix up a sufficient quantity of good, new material to add to the old earth as filled in around trees again. This root pruning applies equally to all kinds of fruit trees, both in the open grounds and on walls.

Towards the end of the month is a good time to put in a batch of cuttings of bush fruits according to requirements. As soon as the leaves have fallen from the bushes go through the bushes, and with a good sharp knife or secateur cut the requisite number of clean, healthy shoots, tying each variety in bundles with a label bearing the name of the variety. The cuttings, when ready for insertion, should be about twenty inches in length. Red and white currants and gooseberries should have the buds pared off eight or nine inches of the lower end of cutting, also a couple of inches of the top of cutting cut away. Black currants need no further preparation than to cut a couple of inches off the point of the shoot. These cuttings may be inserted in ordinary good garden soil in rows about fourteen or fifteen inches apart, and the cuttings about five inches apart in the rows. When inserting the cuttings cut the side of trench quite straight down, clean and firm, place the cuttings quite perpendicular against the hard side; fill in the earth and make the cuttings all thoroughly firm by plenty of trampling; finish the surface of the ground nice and fine, especially round the cuttings. When choosing the black currant cuttings be careful to see that there is no "mity" or "big buds" on the shoots. If such should be met with consign them to the nearest fire, and only put in perfectly healthy and clean cuttings.

Wherever fruit trees are subject to attacks of the caterpillars of "winter moths" steps should now be taken to prevent or check their recurrence by capturing the female moths, which commence early this month to deposit their eggs on fruit trees, and continue to do so throughout this month, and early part of November, unless destroyed. The traps or grease bands are prepared for catching the moths as they crawl up the trees, by taking strips of grease proof paper about six inches wide, and tying them tightly around the stems of the trees a couple of feet above the ground; tie the bands at upper and lower edges, then smear the bands thickly with cart grease. The grease must be kept soft by occasional additions, as the former application hardens, so that the moths may stick fast in the grease and be destroyed.

The Vegetable Garden.

By WILLIAM TYNDALL, Horticultural Instructor,
Co. Kildare.

STORING ROOT CROPS.—This work must now be done, and all roots should be carefully lifted, especially beet root. Cool sheds are best for storing all these kinds of vegetables, but those which are better left in the ground are parsnips, salsafy, and scorzonera, also turnips not fully grown. Many roots are injured by putting in to warm sheds, being started into growth. Carrots and beet should have plenty of dry rabbit sand put through the roots when storing, which should be done on a dry day, as the roots will keep much better when stored dry. In lifting beet do not cut or injure the roots, as they bleed if broken, and for the same reason the leaves should not be cut but twisted off four or five inches from the crown of root. Get both lifted before frost. Parsnips and salsafy are not injured by frost, and are generally dug up as required for use, but it is a good plan to lift a portion of the crop if severe frost looks like setting in, as it would be impossible to lift these roots when the ground gets very hard. Take up all left in the ground in February before growth starts, and store in a cool place, as under a north wall, same way as advised for carrots.

All potatoes should be at once lifted in dry weather and stored in pits, covering with straw first and then clay to keep from frost, damp, and light. Always select dry ground for the pits. Often much harm is done to potatoes by lifting in a wet time, but the whole month of September has been ideal for lifting, as advised in last month's IRISH GARDENING; yet in travelling through the country I see very few, if any, potatoes have been lifted, people waiting till October and November, and then pitting in large quantities over one another, expecting the tubers to keep well. It is a good plan to have holes every four yards along the top of pit, and fill with straw; this will prevent heating.

When picking first gather the large potatoes all fit for table use; then the seed size should be picked and put into sprouting boxes and placed in a cool but frost-proof building, where they can be examined during the winter and all diseased ones picked out.

CALIFLOWER.—Carefully examine these plants now turning in, as Autumn Giant, and as they become fit for use break the leaves over the hearts, which will keep them whiter and free from frost, unless very severe. Plants raised from seed sown in August should be transplanted at once into frames or handlights where they are to remain during the winter. The best soil is a medium loam without manure, and made firm. The lights need not be put on the plants till you expect frost, and give air in plenty as the weather will permit during the winter. Dibble out any plants left over at the foot of a south wall, where they will often pass the winter without harm.

LETTUCE AND ONIONS.—These, if planted early this month, often stand the winter and do better than those planted in September, but get them planted at once or leave the planting over till fine weather next February.

Hardy varieties of lettuce should be grown, as Stanstead Park or Hardy Green Hammersmith;

Winter Pearl is also good. Select a dry sheltered border for planting lettuce in.

CABBAGE.—If all the plants required were not put out last month get them planted without delay so as to have them well established before winter sets in.

CELERY AND CARDOONS.—Continue to add earth as they require it, and select a dry day for the operation. Trench or dig over all ground as it becomes vacant, leaving the surface as rough as possible, allowing the frost to penetrate, and it will also give a neater appearance to the plots throughout the winter. Ground so treated will be easier worked next spring and crops make a freer and better growth.

Summer Plants in the 'People's' Gardens, Phoenix Park.

THE present month will witness a great change in the face of things here. Since sometime in June, when the beds were refurbished with the summer material, there has been a continuous advance towards the realisation of the planter's schemes. In the first week of September beds the occupants of which were all in a high state of perfection offered much to attract the attention of any one taking more than a passing interest in floral displays. There was everywhere evidence of thorough cultivation; and the degrees of success obtaining in the various combinations presented interesting studies in plant-grouping.

An attractive and restful group consisted of Fuchsia Marinka, standards and pyramids, over a groundwork of Viola Mrs. George Price, with a broad border of Gnaphalium microphyllum dotted with Begonia Lafayette and Fuchsia Sunray. The tiny double crimson flowers of this begonia contrasted nicely with the grey foliage of the cudweed, which at intervals was trained up pyramid fashion, alternating with the fuchsia. A variegated Abutilon (*Savitszi*) was dotted through the groundwork of violas. The principal features of another bed consisted of Fuchsia Lye's Rival on a ground of Zonal Pelargonium Beauty (salmon scarlet) and Pelargonium cordatum, Asparagus plumosus nanus being used to clothe the stems of the standards. In another bed Begonia Hilda (large double salmon) over Gnaphalium microphyllum was especially attractive. Another good effect was got by grouping Diplacus (Mimulus) glutinosus in two varieties—pinnatus and Sunbeam—with Fuchsia Sunray beneath standard Ivy-leaved Geranium. The groundwork of this bed, consisting of the tricolor Pelargonium Mrs. Pollock and a purple viola, was perhaps a less happy combination. Sutherlandia frutescens over a dark-flowered Heliotrope (President Garfield) was also very effective.

Elsewhere violas made a brave show. Among these one of the most distinct and attractive was the old variety Jackanapes, rich brown and yellow. Its upright habit, firm and clearly marked petals give to this variety a decidedly sprightly appearance.

One immense bed filled permanently with hybrid Wichuriana roses, in which Dorothy Perkins predominated, was apparently a huge success, and indicated that there are roses that can be made to flourish and flower freely where the hybrid perpetuals and its near allies fail to give satisfaction.

W. B. B.

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IRISH GARDENING

VOLUME V.
No. 57

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

NOVEMBER
1910

Weeds.

By PROFESSOR JAMES WILSON, Royal College of Science for Ireland.



It is a pity we have no better name than *weed* for weeds! And a pity also, since the name by itself is not strong enough, it has no very pithy and strengthening adjectives. *Ruffian* is a fairly strong

word, much stronger than *weed*, yet we have gone to the trouble of shoring it up with such adjectives as *callous* or *bloodthirsty* or *rieving* in order that its effect may be intensified in the mind of the man who hears it. But such adjectives add only a little weight to *weed*. A *ruffian* weed, a *thieving* weed, a *smothering* weed is only a little more than a weed. *Smothering* is perhaps helpful because it describes the ways of some weeds; but still it lacks pith.

Or, if we cannot get a word or an adjective, can we not get a phrase that will drive the word *weed* into our souls as a hammer drives a nail into a piece of pine? Such phrases as *the fly in the ointment*, *the sand in the machinery*, occur as examples of what is wanted. Only it must be something more appropriate: something that will raise in our minds ideas with regard to weeds comparable to the nauseousness raised by one of these phrases and the raspiness raised by the other.

And we need it. We need it very badly. A weed is *just* a weed; *only* a weed. Weeds do no great harm! Some may do more than others: they may shadow and smother the

crop; but for the main they merely seize upon some of the food materials, some of the minerals, that might have been absorbed by the plant. And of these there are plenty more! True, but that is not all they do. They do far worse than that. They seize the ingredient that is most essential to the crop, the ingredient without which, despite the superabundance of all the others, the crop cannot come to maturity or even to respectable vigour and stature. They seize the drink of the crop, the liquid nourishment that is required in a thousand times greater quantity than that which might be called the solid meat.

And this can be demonstrated. Forty years ago at Rothamsted there were two plots of land on one of which a barley crop was grown, while the other was fallow. At the end of June—the end of June remember—when the barley crop was only three months old, the fallow plot contained a half more water than the other. As a matter of fact only 20 per cent. of the first three feet of the soil of the barley plot was water; while in the soil of the fallow plot there was 30 per cent. of water. The 10 per cent. difference represented the water the barley had withdrawn from the soil and cast back again into the air.

And if barley can do this, why not any other plant? Why not any weed? Barley is not a large plant, but docks and thistles and cow parsnip are large ones, and plenty of little weeds are quite equal to one or two big ones.

Still another example. In many parts of Canada and some of the American States the rainfall is very small—only half our thirty or forty inches per annum—too small to raise

an average crop. What do the farmers do? They *dry farm*. They take a crop only every second year, or two years in every three, as the case may be. Their crop takes away the moisture one year, but the next year every drop that falls is as far as possible conserved—saved up for the next crop. And this is done by tilling—tilling in the midst of summer—so that the soil is heaved up, the tank, so to speak, is made bigger, and the weeds are tormented and torn till their existence, if they do exist, is anything but a pleasure.

Silver-leaf Disease.

SILVER-LEAF disease is of frequent occurrence among plums, peaches, and other stone-fruit. It is a fatal malady as a rule, and any tree seriously affected can scarcely live more than a few years. The disease is characterised by a whitish or silvery appearance of the foliage, and its cause, until quite recently, was wholly unknown. It was by means of inoculation experiments in 1902 that Professor Percival demonstrated its fungoid origin. The trouble is caused by an attack of the purple Stereum, a fungus commonly found on fallen tree trunks. The spores of Stereum enter the tissues of a living tree by way of a wound in the bark. They then germinate and produce a mycelium of extremely fine tubes. So long as the branch lives the mycelium thrives. It grows forward and backward along the branch, and is perennial. It is supposed that the parasite produces a substance that is carried along in the sap to the foliage, where it accumulates, and so acts upon the cells of the leaf that they get partially separated, and that this causes the silvery appearance that is so characteristic of the disease. An interesting peculiarity of this parasite is that so long as the tissues of the branch within which it feeds are alive it makes no attempt to produce spores. When the branch dies, however, the sterium immediately begins to fructify. The fructification starts as a tiny patch of purplish substance upon the surface of the bark. This gradually develops into a toughish plate that grows out or away from the bark. Its upper surface is zoned and its under surface is purplish and densely covered with extremely minute spores. Usually several plates arise together, and are placed one over the other in a tiered cluster.

We have here two facts of the utmost importance to fruit-growers troubled with silver-leaf disease—*first*, that so long as the branch is alive there is no risk of infection from tree to tree, but grave risk of infection from branch to branch or from stem to root; *second*, that following the death of a branch spores are formed in enormous numbers, and the possibilities of infection from tree to tree are at once established. From the nature of the case, spraying is obviously useless. No spray or other external application can touch the parasite growing in the living wood within the protecting bark.

From what has been said concerning the life history of the Stereum it is sufficiently clear that the only remedy is to at once remove the entire limb affected with the disease, the sooner this is done the better. The branch may live and bear fruit for several seasons, but it is then sure to die, while, in the meantime, the mycelium will have extended itself considerably—perhaps, indeed, imperilling the life of the whole tree. Another point must be remembered, the removed branch should be destroyed; if merely thrown aside the contained Stereum will fructify and so become a centre of infection.

A number of most interesting and instructive experiments on this subject has been recently conducted at the Woburn Experimental Fruit Farm, and the results are given in the twelfth report of the station.* It deals with methods and results of inoculation, susceptibility of different kinds and varieties of trees to the disease, influence of individual vigour of the tree, treatment with iron-sulphate, effect of soil condition and other subjects. Growers interested in this disease should not neglect to get a copy of this report.



Simplicity in the Garden.

THE satisfaction of a garden does not depend on the area nor, happily, on the cost or rarity of the plants—it depends on the temper of the person. One must first seek to love plants and nature, and then to cultivate the happy peace of mind that is satisfied with little. In the vast majority of cases a person will be happier if he has no rigid or arbitrary notion, for gardens are moodish, particularly with the novice. If plants grow and thrive he should be happy, and if the plants that thrive chance not to be the ones that he planted, they are plants nevertheless, and nature is satisfied.—*Bailey*.

* London: The Amalgamated Press, Ltd. Price, 1s. 7½d., post free.

Current Topics.

By C. F. BALL, Royal Botanic Gardens, Glasnevin.

PLANTING time is with us once again, and to those who have this object in mind the importance of early planting cannot be urged too strongly. Plants put out in early autumn usually make some roots before the winter, and will start to grow strongly in the spring. Again, the early buyer will get the better plants; in some cases where there is a run upon a certain plant the nurseryman's stock may get rather low, and people ordering towards the end of the season will get smaller plants than the early buyers. Many persons having gardens like to get a few new plants every year, so, perhaps, a note on novelties and the lesser known plants may be of value.

We are pleased to note that *Lobelia Glory of St. Anne's* has received an award of merit from the Royal Horticultural Society last October. This *lobelia* was raised by Mr. Campbell, gardener to Lord Ardilaun, St. Anne's, where these *lobelias* are made quite a feature for autumn bedding. This variety may be described as the finest of all; a photo appeared in *IRISH GARDENING*, October, 1908, of *Glory of St. Anne's lobelia* under the name of *L. Morning Glow*, which it was formerly called. Later on it will be put into commerce by the Tully Nursery Company.

Two good irises suitable for the bog garden, or for doing well if treated liberally in a border, are *Iris sibirica Snow Queen* and *Blue King*. For similar positions the *Newry* forms of *Trollius* can be highly recommended; such improved forms as *T. Smith*, *Orangeman*, *Freedom*, and *Goldsmith* give a rich reward in spring. Probably because it was new, the Chinese *Astilbe grandis* received a great ovation. To my idea it lacks the grace of the drooping white panicles of *Astilbe rivularis gigantea*.

Two new climbing *Monkshoods* are now in commerce, *Aconitum Hemsleyana* and *A. Vilmorini*, also known as *A. volubile latisectum*; the former is the better plant of

the two. A pink form of the common *Monkshood*, called *A. napellus carneum* is also a gain. We now have yellow, pink, white and blue in this genus, which rarely occurs in the same family.

Several new oriental poppies are very welcome, especially *Princess Victoria Louise*, a good clear pink, and *Princess Ena*, named by the Queen of Spain, similar in colour to the former, but smaller and tulip-shaped.

Helenium Riverton Gem is an American introduction, a seedling from the old *H. autumnale striatum*, upon which it is an improvement. *Asterolinosyris Willmottae* is an interesting botanical hybrid representing the union of *Aster acris*, and *Linosyris vulgaris*, but for garden purposes it may be briefly described as two good plants spoilt. *Geum bulgaricum* throws out large promising leaves, and one is greatly disappointed when the weedy, insignificant flowers appear. *Thalictrum Delavayi* and *dipterocarpum* are very similar, but beautiful plants having rosy, lilac flowers.

The *heucheras* are most useful for cutting and border work. *H. sanguinea* (Walker's variety), and the French variety *Pluie de Feu* are two of the best reds. In some gardens difficulty is experienced with *Heuchera sanguinea*; in these

places the hybrids will succeed. Among the best are *Heuchera micrantha rosea*, *Flambeau*, and *Edge Hall* variety; these are pink and wonderfully free flowering.

The miniature *kniphofias* are very pleasing and suitable for the front of a border or a bold piece of rockwork. They grow from eighteen inches to two feet high, and vary from lemon yellow to orange scarlet. Some of the best are *Goldelse*, *Solfaterre*, *Breviflora*, *Nelsoni*, and *Macowani*. *Kniphofia aloides erecta superba* is one of the larger red hot pokers with showy, orange-scarlet flowers, which are erect on the flower stems. King Edward cannot now claim the premier place in the list of white marguerites for *Chrysanthemum maximum* Mrs. Charles Lothian Bell is an improvement.

Pentstemon Southgate Gem is a valuable hardy plant producing spikes of scarlet flowers the whole summer

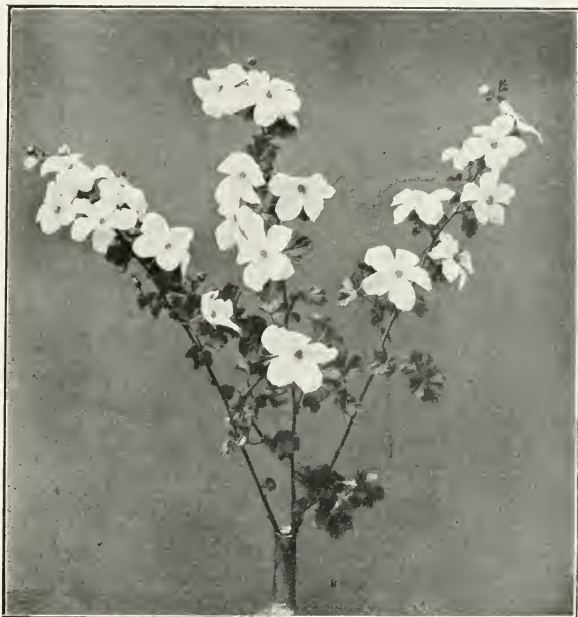


Photo by]

RUBUS DELICIOSUS

[C. F. Ball.

[From a plant grown in the Botanic Gardens, Glasnevin.]

through. Myddleten Gem is similar in all respects, except that it has pink flowers. Some of the new shrubs were noted in the April number of this year, but others may now be added to these.

The buddleias at Glasnevin flowered well. The three forms of *B. variabilis* called *magnifica*, *superba*, and *Veitchiana* may be placed in the order given, *magnifica* being the best. For a small garden one variety should be sufficient, as they are rather similar. *B. nivea*, a newer Chinese species, has white, woolly leaves and stems, but the flowers are decidedly poor.

Hydrangea arborescens grandiflora is a really good freely-flowering shrub, something like a dwarf Guellder rose.

Tamarix hispida festalis is a shrub which deserves to be better known, for it is the most beautiful of the Tamarisk family, and received first prize at the Paris Exhibition in 1900. The habit is graceful, with light green foliage and pink flowers (July and August).

Robinia Kelseyi, with pink flowers, is a promising introduction from North America; it makes a small tree, and bears pink flowers in June, followed by fruits covered with reddish hairs.

Juniperus pachyphæa comes from the mountains of Arizona, and is a very ornamental shrub of pyramidal habit, but the varieties *J. pachyphæa elegantissima* and *stricta* are far more glaucous than the type, and well worth procuring.

Spiræa Aitchisoni does not flower satisfactorily in all gardens. Where this is the case *Spiræa assurgens* will be found a good substitute; both have divided leaves and large panicles of white flowers like *S. sorbifolia*.

The Chinese brambles are getting very numerous; some are quite distinct and harmless, others just the reverse. *Rubus bambusarum* is a climber with leaves composed of three lance-shaped leaflets, making long trailing shoots five to ten feet long. *Rubus flagelliflorus* so far seems to be the best of the climbers; it has evergreen leaves marbled in a young state, later on becoming deep green, covered on under surface with a buff tomentum. The older *rubus* delicious, from the Rocky Mountains, is still the best of the ornamental flowering species, its thornless character and beautiful white flowers in spring make it a valuable shrub.

Roses.

By O'DONEL BROWNE, M.D.

THE other day I was reading an account of a medical show in London, and was greatly amazed and interested in a passage of that article where cultures of living bacilli, the causes of our so-called winter colds and pneumonia, were shown to an admiring public. Then these living cultures were exposed to a solution of "Formarose"—a new preparation made from the extract of certain heavily perfumed roses—and lo and behold! these bacilli were killed. It seemed to act on them in a very short while and mattered not whether the solution containing the bacilli was acid or alkaline the result was the same, a horrible, quick death to bacillus catarrhalis and bacillus pneumococcus. Now comes another step towards this cure. Germany, we are told, has begun to inhale perfumes from a particular rose—viz., Duke of Edinburgh. How Messrs. Paul, the raisers of this rose, will chuckle to

themselves when they see this. Fancy in their catalogue next year an appearance of a notice to say that only for them we should all have colds. Some German doctors already declare that the perfume of Duke of Edinburgh when extracted and converted into aromatic pills will completely cure colds.

I have often wondered why we were given such a lot of roses whose perfume is their chief charm, and often has the thought occurred to me that hidden away in a rose there is a cure for some of the terrible ills which man is heir to. There was a time when I was very susceptible to cold catching, but since I took to rose growing I find that my colds have almost entirely disappeared. There are two reasons now clear to me that have acted for my cure: (1) more fresh air, (2) accidental inoculation with "Formarose." Asked for a cure for a cold I would say "grow roses," work as much as possible at them in your garden, and never wear a hat when at your work. Codling oneself up and wrapping one's body up must keep one's body more liable to chills; this you cannot do with a rose garden. Where can you find work the whole year round in a garden more than in a rose garden? There is always a great deal to do from March to November, and for the rest of the months there is generally something to be done, be it thatching, staking or planting. It is this constant something to do that made me take to roses more than any other flower, and I envy the man with a greenhouse from the bottom of my heart. Here he can have his pets when outside nature says "no" to his pleadings; here he can propagate the new varieties by grafting in that dullest of dull months, January; here he can try his hand at that most exquisitely interesting subject, cross breeding; and here he can have in all their glory those lovely varieties which are rarely seen out of doors. Truly the man with a greenhouse should be a happy contented rosarian. I wish I were! To my mind there was never a greater treat to a rose lover than to enter a greenhouse during early spring and see lovely pot plants, and at the same time to inhale "Formarose." Will it ever come that we doctors will establish homes where patients can do a rest cure and be treated by the odour of roses to cure their winter colds? I am afraid if it does the first patient will be the writer, and when I have done my cure I shall start a home and receive patients to be treated to Duke of Edinburgh perfume or any other. There seems to be something genuine in this new cure. Last year I sat next a well-known Dublin doctor who, I suppose, knows more about the ravages of bacillus catarrhalis than anyone else. He commenced by chaffing me, *re* my pets, but by the end of dinner I had persuaded him to try and grow roses for himself. "Well, Browne," he replied, "I will on condition that you give me a list of those that smell." "I do not care for a rose unless it smells." Forthwith went an order to the nursery for a host of heavily perfumed roses, and when lately I met him in consultation he finished our consultation with a most important five minutes' chat on not the patient but roses! Thank goodness he is another convert to rose growing, and though he does an enormous amount of work year in year out he has always time to see and smell his roses, and I have not heard of his having caught a cold lately from any of his clients!

Rock Gardens.

JUDGING from the number of books on Rock Gardens that have been issued from the press within the last few years there must be a great deal of real interest taken at present in this particular form of gardening. There are many reasons for this. First, the amount of space required for the accommodation of even a considerable number of Alpines is relatively small, so that the man with the most modest garden can, in this matter, get as much enjoyment out of his hobby as the owner of one of the biggest gardens in the country. Then, once the ground is prepared and planted, the after-attention required is comparatively slight and altogether delightful. True, each kind of subject demands special knowledge as to soil, position, and treatment, but this only adds to the fascination of rock gardening, as it develops the powers of observation, gives scope to the intelligence, and calls forth all the resourcefulness and intelligent forethought of the cultivator. Then the results. What a pleasing succession of rich colour pictures are produced throughout the changing cycle of the year, and all at so small an expenditure of time, trouble, and money!

We have repeatedly given in these pages articles on rock gardening, with the view of fostering a love for the cultivation of those miniature wildlings of the hills that refuse to live under the unsuitable conditions that obtain in our ordinary beds and borders. Any one, however, who wishes to possess a complete and reliable guide to the making and maintaining of a rock garden cannot do better than obtain a copy of a work,* written by Mr. Lewis B. Meredith of Graigue Conna, Bray, Co. Wicklow. Mr Meredith speaks of the things he knows,

and his advice if followed will save the inexperienced much trouble and vexation. For example, in making a choice of site it is necessary, as he tells us, to avoid the drip of overhead trees or the robbing encroachment of their roots. The plants must be given exposure to sun and air, and all things being considered a south-east aspect is the best. The soil must be well drained and of a good fibrous, loamy composition. If the ground is naturally undulating so much the better, and if it is placed by

the margin of a shrubbery it will add to its effectiveness as a garden picture. Of rock gardens, the author describes them under their two types—natural where the rocks are already there, and artificial where the ground is to be prepared and the rocks brought from a distance and placed in position. All the various modifications of these types are very clearly explained both as regards small gardens and large. For small gardens the "rockery bed" form is specially recommended. As a preliminary preparation of the soil, in this case, it is recommended to "dig out the soil to a depth of about 2½ feet and put in 6 to 9 inches of broken stones, coarse first and smaller above, which will facilitate drainage. At the same time take care that there is



Photo by)

[Mrs. Delves Broughton

WATER-LILY POND, MOUNT USHER.

[From Meredith's Rock Gardens, reproduced through the courtesy of the publishers.]

a proper outlet for the water to get away. The soil can, if necessary, be replaced, adding more than to bring it to the required height: for the top should be quite 3 feet above the surrounding ground."

The placing of the rocks in position requires skill and a close study of the natural home of Alpines. Alpines are very sensitive to the presence of stagnant water in the soil. The drainage must be perfect; at the same time they get a moist soil and a deep root run, which they love. These conditions must be provided by a judicious use of rock and soil. Giving these conditions the finished work should look natural; each

* Rock Gardens, by Lewis B. Meredith. London: Williams & Norgate.

rock must appear to form part of the adjoining rocks, giving indeed the impression that the foundation of the whole rockery is one mass of rock with weathered portions exposed as in a mountain side. The stones used will be best rough from the quarry, and should be buried at least one-third of their depth, and made quite firm by well pressing the surrounding soil. In placing them they should be slightly sloped towards the back of the rockery so as to compel the water to percolate underneath the stone.

The necessity of using good but not rich soil is insisted upon by the author. The majority of Alpines demand a cool, deep, light and gritty soil, rich in humus, such as a good, light fibrous loam. A clay soil is to be avoided. Following these chapters on the making of the rockery are two others, one on the cultivation of Alpines and the other on the methods of planting. The subjects of wall gardening and wild and water gardens have also each a chapter. Part II. of the book is entirely devoted to an invaluable alphabetical and descriptive list of plants suitable for the rock garden. The work is well illustrated (a specimen of one of the illustrations is here reproduced), is clearly printed in large type and attractively "got up." Mr. F. W. Moore of the Royal Botanic Gardens, Glasnevin, contributes an introduction. We sincerely congratulate Mr. Meredith on the results of his labours, and from the already wide choice of books on rock gardens we have no hesitation in specially recommending this particular one to the readers of IRISH GARDENING.

The Planting and Care of Hedges

By G. O. SHERRARD, A.R.C.S.I.

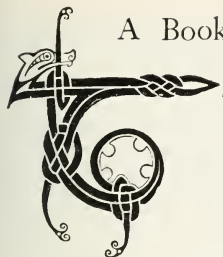
THE planting season for all kinds of deciduous trees and shrubs is now at hand, and in laying out schemes of planting, hedges should not be forgotten. The Irish countryside is sadly lacking in well-grown and properly trimmed hedges, which are such a feature in English rural scenery, and now that the Irish farmer owns his land in so many cases he has no excuse for not looking after his hedges or for not planting new ones in suitable positions. We have several plants with which we may form hedges, and foremost amongst them comes the thorn or quick, which is the hedge plant *par excellence* for the Irish farmer. It owes its pre-eminence to the fact that it will thrive in so many different soils and situations, and is quite impervious to stock when well grown. Other good hedge plants are the beech and the hornbeam, the former for a light soil rich in lime, the latter for a soil of a heavy clayey nature. Both stand shade well, which the thorn resents, hence it should not be planted too near the edge of a wood, and both beech and hornbeam form an excellent mixed hedge with quicks on the soils which they like. When a thorn hedge gets gappy or bare at the base, beech or hornbeam may be successfully used to fill the holes, as they will stand the shade of the hedge overhead. Perhaps the best evergreen hedge plant is holly, but the cattle have a liking for the young shoots, and holly is a slow grower. Privet makes a nice garden hedge, especially the more evergreen, oval-leaved

variety; it is a quick grower, but is not impervious to live stock. Very ornamental evergreen hedges are formed by thuja (*T. Lobbii*) and yew. The latter, of course, is poisonous to cattle, and is not a rapid grower, but it makes a very beautiful hedge for an enclosed garden. When a wind-break some eight or ten feet high is desired, as in nursery grounds or market gardens, privet or the myrobella plum are suitable. The proper preparation of the ground for hedge planting is most essential, which will readily be seen when it is considered that a hedge must occupy the same ground for a great number of years and the plants are very close together. A hedge will not thrive in badly drained land, so that good drainage is the first point to be attended to. If planting on the level is adopted a bed three or four feet wide should be prepared for the quicks, the soil being double dug or trenched to a depth of eighteen inches; if it is in pasture land the sods should be dug in. It is best to plant the thorns in a double row, the rows being a foot apart and the plants the same distance apart in the rows, each plant in a line dividing the space between the two opposite plants in the other line. If the land is good, one row of thorns nine inches apart will suffice to make a thick hedge, and such a hedge is more easily cleaned than a double row one. In raised planting, which is commonly practised in the North of Ireland and elsewhere, the quicks are put in along the side of a low bank about three feet high. Two courses of rough stones are first laid down, the quicks are then placed horizontally on top of the stones and held in position by a layer of sods, the grass side of which is turned inwards. Soil is then filled up over the sods and behind the stones to the height of three feet, so that a low bank is formed, one side of which is faced by the stones and sods, between which the thorns project horizontally, their roots being embedded in the centre of the bank.

The advantages of this mode of planting are that it ensures drainage and keeps the base of the hedge clean of weeds for a number of years. Its disadvantages are that the bank is apt to become riddled with rabbit holes if these animals are present in any quantity, and in course of time the bank may get broken down by stock and the roots of the quicks laid bare. The cost of trenching the ground and purchasing and planting the quicks amounts to about 5d. per yard run of hedge; raised planting would probably come to 6d. a yard. The provision of a good guard fence is an expensive item, and if wooden posts and rails are used it would amount to about 1s. per yard. If the hedge is exposed to stock from both sides two guard fences will be necessary.

The best quicks to use are three-year-old plants which have been twice transplanted. Some farmers raise their own quicks, and this is quite easily done. The haws are saved in autumn, and the seeds washed free from pulp and stored in a heap covered with soil or sand till the following spring—the "rot-heap" of the nurseryman. The seeds are then sown in lines in nursery beds, the lines being about one foot apart. Germination is often irregular, some plants not appearing till the following year. The quicks should be transplanted each season till large enough to use.

(To be continued.)



A Book on Pruning.

THE main object of pruning, so far as orchard trees are concerned, is to increase the quantity and improve the quality of the fruit. If done well the effect is good, but if done badly, no operation can be more mischievous in its results.

Hence the necessity of understanding the "why" in order to know the "how" of the process. A growing tree is a nicely adjusted piece of living machinery, and any violent interference with any one of its essential working organs is sure to have a direct influence upon other parts of the organism. For example, a perfect balance is kept up between the water absorbing roots and the transpiring foliage of the shoots. If we prune the roots then less water is absorbed and fewer leaves will be produced. Conversely, if we prune the branches, and thus lessen the capacity of the tree to get rid of the water taken up by the roots, an increased water pressure is established which will induce the production of an extra growth of sappy shoots to restore the necessary balance between the two sets of mutually acting organs. A man who sets to work to prune a tree ought, therefore, to understand and appreciate that he is about to interfere with the working of a highly complicated machine, and that unless he uses his brains he is likely to do more harm than good.

These remarks are suggested by the receipt of a little book on pruning written by a "practical fruit grower" for the guidance and help of other fruit growers.* The book is exceptionally well done, and, although the authorship is not given, it is evidently the work of a trained observer and of a craftsman skilled in all that pertains to the art of pruning. What is specially pleasing in a book of this character is that the reasons are given for the operations recommended, so that an intelligent pruner may, under varying conditions, alter the details of his practice with assured confidence that he is doing the right thing. In pruning a tree the author rightly insists upon the workman first of all understanding exactly the character of the "wood" that bears the fruit. In a gooseberry, for example, all the "wood" from one year old to the very oldest bear blossoms, but as the finest fruit is carried on branches from four to five years old the aim of the pruner must obviously be to keep the bush always furnished with young wood. In red and white currants the finest and greatest quantity of fruit is found on spurs along the old wood from two years back to ten or fifteen years. And as it may be noticed that most of the fruit are on spurs clustering round the base of each year's growth the aim of the pruner should be to get long lengths of old wood well furnished with spurs. And as the one year's shoots do not flower, and also as only the basal

buds in such shoots will develop into fruiting spurs, so much only of these shoots are retained as may be required for the lengthening of the branches. But, as in black currants, the character of the fruiting wood is entirely different—their treatment is different. The flowers are formed on one year old leaders, or on little one year laterals, or, best of all, on strong young shoots. This, of course, suggests the method of pruning, which is to encourage plenty of young vigorous shoots, and the cutting out of all old exhausted or weakened branches. With regard to apples a careful examination of the tree will show that "under natural conditions the fruit-bearing wood will be produced all over the tree, and that our best course will be to so train it as to grow as much well-matured wood as possible, and to keep the wood regulated and spaced in order to admit light and air to the whole of the fruit as well as possible." Plums, having much the same general character of flowering as the apple, are treated similarly; indeed, as the author remarks, "there is a good deal of resemblance in the method of pruning red currants and bush apples and plums, the only difference being that we allow a little more latitude to the side shoots in the latter, and do not cut them quite all off as we do the former."

After discussing the flowering peculiarities of each kind of fruit the author proceeds to give details as to the general methods to be followed. With respect to plums and apples the author briefly summarises his instructions in these words—"But what has been said will be sufficient to show the general idea of laying in the foundation branches evenly round the stem and then drawing the tree out, keeping a fairly open centre, allowing the formation of new branches as room is found for them in the widening spaces between the older branches as they grow." Having carefully described the general principles the author then proceeds to deal with each leading market variety. For example, in the references to Worcester Pearmain pruners are reminded of its remarkable characteristic of bearing practically all its fruit on the outside of the tree, and that, therefore, it is simply ruinous to go all over the branches shortening all the leaders and cutting off all the side shoots. Of course, as is stated, it must be done for a year or two in order to lay a good foundation for future growth, but after branches have been established the less done in this way the better. In this way he deals comparatively with seven varieties of gooseberries and sixteen different types of apples.

Chapters devoted to the cultivation of pears, cherries, nuts and raspberries, and treated, in the same way are also included in the book. Useful information is given on tools and how to use them, while the final chapter on pruning on small holdings should prove extremely helpful to cottagers and small farmers.

From what we have said and quoted it will readily be inferred that this is no ordinary book on pruning, but one written by a man who has had not only great experience in fruit farming but who is well able to put his experience clearly and methodically before his readers. Every fruit grower in the country should get it.

* "Pruning." Illustrated. A compendium of out-door work published by the Lockwood Press, London. Price 1s.

Autumn Colours.

By J. W. BESANT, Glasnevin.

AMID a wealth of brilliant autumn colouring the Tupelo or Pepperidge (*Yucca sylvatica*) has this year been particularly striking. No better tree can be found for a moist position where colour effect in autumn is desired. The leaves, measuring some 3-4 inches long, become brilliant scarlet about the middle of September, and continue so for a fortnight or more. The tree is a member of the Dogwood family Cornaceæ, and hails from North America, where it is said to form a tree from 30 to 50 feet high.

Pyrus nigra also is a highly desirable subject to plant for colour effect in autumn, the leaves in September turning a glowing crimson scarlet, effective from a considerable distance. An additional charm here lies in the usually prolific crop of jet-black fruits, resembling in form some of the hawthorns. A native also of North America this, like the Tupelo, might be effectively used in masses in large shrubberies or the outskirts of plantations.

Many other trees and shrubs furnish fine effects in autumn, and where judiciously planted form permanent features of great beauty. Thus of shrubs, the Dogwoods all give charming yellow and red tints in the dying leaves, which, when fallen, reveal bright-red and also yellow stems which prove most attractive through the winter months.

One of the most brilliantly-coloured shrubs of autumn is *Berberis Thunbergii*, the leaves of which turn a beautiful orange scarlet. This is deserving of being planted in large masses, and would prove a never-failing source of delight. The Sumachs are also very striking in October, the leaves being beautifully coloured orange and red, particularly in *Rhus cotinoides* and *R. typhina*.

Of trees, one of the most effective this autumn was the Sugar maple (*Acer saccharinum*), the leaves turning a beautiful bright orange before falling. Several of the cherries are also effective in autumn, not the least worthy in this respect being the common Gean Tree (*Prunus avium*). Many other woody plants give wonderfully rich and warm effect in autumn, and prove quite as welcome and pleasing as the gaudy hues of spring and summer flowers.

Farming as a Moral Equivalent for War *

By FRANCIS E. CLARK.

THAT always interesting pragmatic philosopher, William James, suggested that something should be discovered as a moral equivalent for war. He desired some occupation that will develop manly qualities, that will require grit and vigour, and that will whet what Mr. Roosevelt calls the "fighting edge" of character, which at the same time will be useful for the community and State, and not destructive and barbarous as is war between men and nations. He suggested various useful but humdrum employments, like washing windows, washing dishes, mending roads, fishing on the Grand Banks, and the like, for the gilded and idle youth who now speed in automobiles or loiter on piazzas and lead frivolous or vicious lives, a menace to society and the Nation.

I think, with all due deference to the great philosopher, that I can improve on his suggestion, and propose an employment which, in the classic language of the colleges, will "put it all over" these other occupations as a useful development of the fighting instinct, a hardener of muscle, a quickener of the brain, a developer of resourcefulness, and a sharpener of the will on the hard grindstone of opposition.

This occupation is as old as Adam, as respectable as Cincinnatus, as beautiful as the Garden of Eden. It is none other than the ancient and honourable profession of farming.

But what I am chiefly concerned about in this article is not its age, its respectability, or its beauty, but its strenuousness, its useful development of the combative elements in our nature, which were evidently implanted for some good purpose; in fact, as my title indicates, I desire to consider farming as a moral equivalent for war.

Some people are very much afraid that when all our swords are beaten into ploughshares, and all our spears into pruning-hooks, the race will deteriorate, the manly virtues, with manly muscles, will become flaccid, and the race of heroes will die out. Do not be afraid of this, my friends, while farms remain to cultivate, and weeds grow, and worms wriggle, and moths fly. Let no one deceive himself on this point. The Creator has furnished for any one who owns or cultivates a rood of land all the opposition that a healthy man needs to keep his fighting edge keen and bright.

Here is my little farm, for instance. It furnishes as good an illustration as any other. The winter's snow and rain and frost no sooner relax their hold on my few acres than the fight begins, and if I fail to be on my guard for a single week—yea, for a single day—the enemy takes advantage of my carelessness, and my forces are routed.

With eagerness I waited for the soil to get sufficiently warm and mellow to plant the first seeds, and, with hope of a glorious harvest, I planted my earliest vegetables, which are warranted to withstand a little frosty

nip. My peas and radishes and cauliflower were buried in their appropriate beds, and lovingly left to Nature's kindly care. A little later my corn and beans and cucumbers and melons and squashes were planted, and then my tomatoes and egg-plants were set out.

I fancied that only my family and myself and a few kindly neighbours, who, I was conceited enough to suppose, rather envied my agricultural skill, knew what I was doing. But I was mistaken. Ten thousand little beady eyes watched my maneuvers, ten thousand wriggling creatures congratulated themselves on their coming victory.

I heard the crows in the neighbouring pine trees

The cutworm brigade of the enemy were more patient than the crows, as they needed to be. They bided their time, and just when the cauliflower and Brussels sprouts and cucumbers timidly pushed their green heads above the brown soil, they bore down upon them, gorged their loathsome bodies with the tenderest juices of the young plants, and left me defeated and my garden strewn with the wilted and dying remnants of the crops that only yesterday gave so fair a promise.

All this in a single night. Each plant had its own worm, just one single worm, but there were enough worms to go around. It was as if the worms met



Photo by]

[W. Winstanley

VIBURNUM OPULUS STERILE (THE SNOWBALL TREE)

Growing in the Grounds of P. La Touche, Esq., D.L., Harristown, Brannockstown, Co. Kildare.

cawing and caucusing together, and, in manlike folly, which pooh-poohs at anything it does not understand, I said—"Those foolish crows have just one raucous note. Why can't they say something sensible and melodious?"

In reality they were saying to each other: "He's planted his corn; he's planted his corn! I know where I'll get my breakfast to-morrow morn."

Sure enough they did, and as they get up an hour or two before I thought of rising, they were in my corn-field long before I was, and the first round of the battle was theirs. To be sure, I could replant my corn, but that was a confession of defeat, as though a general allowed his troops to be mowed down and then had to fill up his regiments with raw recruits, which in turn were just as likely to be slaughtered.

together in a council of war, and the general-in-chief marshalled his troops with consummate skill, assigning to each soldier his post—a cauliflower, cabbage, or cucumber, as the case might be. They all obeyed orders implicitly, and I was routed, horse, foot, and dragoons.

I could have borne the disappointment, and attributed it all to the notoriously uncertain hazards of war, if the enemy had been less wanton, if they had eaten the rations they captured; but no, they simply cut the plants in two, near the ground, and left the beans to wither in the sun and the roots to dry up in the ground. They were like a regiment of looters who could eat but little and carry away nothing, and who, for the mere fiendish pleasure of destruction, burned and ravaged everything that came in their way.

However, I replanted and reset my vines and plants, protected them with fences of tarred paper, and placed mines of "bug death" and "kno worm" around them on every side, and girdled up my loins with patience once more.

By that time the battalions of the air were descending on my trees, and I hastened to turn my attention to them. Here I seemed more helpless than before. It was as though the new war aeroplane had been perfected and the enemy came flying from the blue to discomfit me.

The gypsy moth, the brown-tail moth, and, above all, the codling moth, all attacked me from above. The latter flies only by night, and does not begin his depredations until honest felks have gone to bed. Then he gets in his deadly work, and, it is estimated, ruins half the apple crop of the United States by his nocturnal attacks.

How cunningly he plans his campaign against the king of fruits! No Napoleon ever better understood the act of harassing the enemy. He waits until the right moment, and when he sees the blossoms falling, he comes flying by myriads to the orchard. He glues his eggs to the embryo apple or near them. In about a week these eggs hatch, and the little worms wriggle their way into the cup-like blossom end of the apple. Here they hide and feed for several days, then bore their way into the apple to the very core, and the days of that apple are numbered. The apple indeed may live and grow, but it will always be a poor, knurly, wormy, worthless thing.

But the codling moth is only one of the enemies of my trees. There are the regiments of lice that get into the leaf and curl it up, and the light infantry of the apple maggot, a tiny worm that burrows into the fruit in all directions, and the tent caterpillar that camps on my trees and houses a thousand troops under the dome of a single tent, and the scale of different kinds, San José and oyster shell and scurvy, all of which attack the bark.

Every tree in my orchard, and every part of the tree, has its own particular enemy. The cherry has the "May beetle," the "rose bug" and the "brown rot." The pears have the "pear tree slug," and the "pear blight;" the plum has the deadly curculio and the "plum gorer;" and the peach has the "yellows" and the "peach rosette."

But not only does every tree have its own enemies, but every part of the tree has its foes. The bark has its borers and its scale, the leaf its lice and curlers, the blossom its moths, the fruit its borers. Each enemy knows exactly the weakest part of the citadel he has to attack. He knows the exact moment when his attack will be most effective. He has the accumulated experience of a thousand ancestors behind him. He never makes a mistake in his manœuvres, or fails to avail himself of the psychological moment.

What, then, can I, a mere man, do with a thousand watchful, unwearied foes to combat—a mere man, with only one pair of hands and one poor brain to oppose these multifarious enemies; or, if I do not forget to count my Portuguese assistant farmer, two pairs of hands and two poor brains at the most and best? Shall I give up the fight and call myself beaten by the

worm, and the moth, and the crow, and the weed,—which I have hitherto forgotten to mention, but which is always ready to spring up and take my plants by the throat and strangle them? By no means! Here comes in the joy of the struggle. Here is the delight of a fair fight and no favour. Quarter is neither asked nor given. I will oppose the wisdom and skill and resources of my kind against worm and weed and moth and bird.

Come one, come all! I defy you to do your worst. I have got my artillery ready. My battery consists of two sprayers, one for the trees and one for the plants. My ammunition is of various kinds, but largely consists of Bordeaux mixture, Paris green, arsenate of lead, whale oil soap, and tobacco tea.

I spray, and spray, and spray again. As often as the enemy attacks, I sally out to meet him with my long and deadly tube of poison. I do not wait for him always to assume the offensive, but as soon as he shows his head I train my artillery upon him.

It is a fight to the finish. There can be no drawn battle in this war. One or the other must win. Little by little I find my enemy giving way. The spraying pump drives the worms out of their fastnesses. The potato bugs give up the fight. They are conquered by Paris green and the sprayer. The cutworms are overcome by constant watchfulness and frequent replanting. The scale I attack with kerosene emulsion and whale-oil soap. The curculio I knock off and destroy. The tent-worms I burn in their own gauzy tabernacles; and, lo! when autumn comes, in spite of innumerable foes, foes that creep and crawl and fly and bore, I am the victor. My apples are rosy and fleckless, my peaches downy and delicious, my cauliflowers lift up their great white heads out of their chalice of green asking to be plucked, my tomatoes hang red and luscious on their vines, my potatoes are smooth and spotless, my corn is full-eared, sweet and juicy; and if I am not a better and stronger man for my tussle with Nature and the enemies of my farm, then there is no virtue in war and no value in the "fighting edge."



CUTTING DOWN HERBACEOUS PLANTS.—We are convinced that considerable harm is often done by cutting, as the custom is, the stems of herbaceous plants soon after they have ceased flowering. Gardeners, in their anxiety to keep up an appearance of tidiness in the flower borders, are tempted to clear away all the flowering stems immediately they show the least sign of failing. This is a mistake, as the natural process of the plant is to secure for its perennial storage tissue all the residue food left over from the feeding of the flowers and the maturation of the seeds. Such food is slowly passed down from the now failing shoots, and if these are prematurely removed, the shoots of next year will be correspondingly robbed of readily available nutriment. This is not only right in theory but in actual practice as well. Experiments have been tried that prove the point beyond dispute. Therefore, do not be in too great haste to clear the herbaceous border of its old stems, but allow sufficient time for this translocation of food.

Judging Vegetables.

By WILLIAM TYNDALL.

WHEN exhibiting vegetables they should be perfectly clean and fresh, free from blemish of any kind, correctly and neatly named. Though exhibitors generally show vegetables clean and fresh, how seldom do we see them take the trouble to write the names on cards, if at all, generally any kind of slip of paper answering the purpose? I believe all show societies should insist on all exhibits being correctly and neatly named, as otherwise most of the educational value of exhibitions is lost to the many who visit the many shows now held throughout Ireland. Every year the work of the judges becomes harder with competition more keen, so that now judging the judges often takes up most of the afternoon with some competitors, and it matters little to such how practical and painstaking the judges are, none are above suspicion with this class of man, who seldom knows the point value or what makes a good dish, of the vegetables shown. Now, to make it easier for young exhibitors to select exhibition produce I pen these lines.

Samples that make up a dish should be of the same size and one variety only, yet how often do we see exhibitors put in a dish an extra fine sample because it is good, and thereby help to spoil a fair dish in evenness of size, and it is not uncommon to get exhibits mixed.

In judging collections of vegetables points must be given for each dish, and the maximum points allowed should vary with the importance of each kind of vegetable, uniformity being only considered when other points are equal, and then marks can be given for beauty of arrangement, correct naming, and difficulty of cultivation.

By dish is meant a receptacle of any material and any shape. The quantity that makes up a dish varies at different shows, and at the last show of the Royal Horticultural Society of Ireland a very good collection of vegetables was disqualified because it did not contain the correct number of samples in each dish. Judges should not disqualify exhibits without a good reason, but when they are satisfied that there has been an intention to deceive, or that the conditions in the schedule have been purposely violated, they should not for a moment hesitate to disqualify. But often judges can point out to the secretary of the show or steward who accompanies them such errors as are merely technical and not much affecting the character or merit of the exhibit, and ask them to correct it before judging.

Quality should be the leading feature in making awards, though in cottagers' classes at shows size may take precedence, more especially at small local shows.

The following points and much of above are given in the Royal Horticultural Society's rules for judging, which can be had at all booksellers, price 1s. 6d., and should be in the hands of all exhibitors. I do not quite agree with the number of points given to each vegetable therein, as for example—Carrots, parsnips, and leeks get a maximum of 6 points each, and then turnips, vegetable marrow, cabbage, and lettuce, the same points, while cucumbers get 7 points. Growers know well how much more difficult it is to produce good

samples of the first named kinds, and in my opinion, they should get 8 points same as Runner and French beans, peas, celery, onions, tomatoes, cauliflower, and potatoes.

Parsley may be used for garnishing a collection or dish, but it does not count as a vegetable or carry points. When shown for prizes it is included under herbs, and these should be shown in bunches with clean, fresh leafage. The best are sage, thyme, mint, marjoram, savory, tarragon, fennel, and parsley.

(To be continued.)

Michaelmas Daisies.

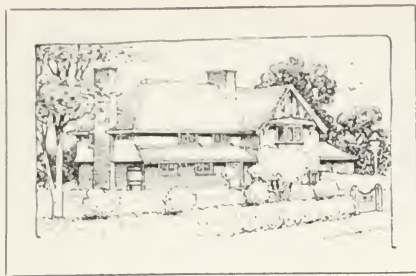
THE bright, mild autumn through which we have now passed has enabled us to see the hardy autumn-flowering plants in their true glory. This is especially the case with the Michaelmas daisies, of which there is now an endless choice. For brightening our borders or edging our shrubberies we cannot ask for better subjects; they answer the purpose well, they are graceful in habit, bright in colour, and are easily cultivated. For in-door decoration they are also indispensable, as they are light and easily arranged, and last longer in water than any other autumn flower.

The following is a small selection from the many and beautiful varieties that are now to be had:—Lil Fardell, a tall variety of good habit, growing from $3\frac{1}{2}$ to 4 feet high, with large, clear pink flowers measuring 2 inches across. Ryecroft Pink, a paler variety than the former, with large flowers and a free habit. St. Egwin, this is one of the best, the flowers are of good shape and a soft pale pink; the habit is compact, and from 18 inches to 2 feet high.

Among the blue and lilac shades we have Keston Blue, the best blue of all; the flowers are large, well-shaped, and produced freely; the habit is tall and graceful, from $3\frac{1}{2}$ to 4 feet high. Climax, a very distinct light blue, with a good yellow centre; the florets are broad and of good substance, and last well when cut; altogether an advance in this colour. The Hon. Edith Gibbs, for in-door decoration this is certainly the most useful; no "arranging" is required, as the plant grows in beautiful graceful sprays, just fit for picking and putting in a vase; this plant should certainly be in every collection, the flowers are pale lilac, not large, but starry and produced in quantities; it also makes an excellent border plant, but its real beauty is lost if crowded up with other tall-growing plants. Beauty of Colwall, this is a double variety with lavender blue flowers; a very remarkable, tall-growing novelty, but requires good cultivation, or it may revert to the single.

Among the purples Ryecroft Purple and Mrs. S. T. Wright may be mentioned. These are two good tall-growing forms with large flowers, and make good companions to Lil Fardell and Ryecroft Pink. Delight, Freedom, and Sensation are three very pretty small white, free-flowering forms, very useful for in-door decoration. Candida is a good large white, with the flowers thickly set on the branches, and well marked yellow centres.

This is merely a selection, but it may help those who intend planting this autumn. R. M. POLLOCK.



Arbor Day.*

THE Irish Forestry Society is anxious that the interest now aroused in the movement for replanting the waste lands in Ireland should not be allowed to flag, and they solicit the co-operation of all who have the beauty of our country and the welfare of its inhabitants at heart, in the founding of a national Arbor or Tree-planting Day. It is not claimed that the planting of trees under any Arbor Day movement will, in itself, re clothe our waste lands with forests. We are convinced that this can only be done effectively by the Government, who possess not only the means of carrying it out, but who can also afford to wait the necessary length of time for a return from tree-planting operations.

The widespread celebration of an Arbor Day would stimulate the interest of the people themselves in this great question, and *they* should take it up and force it on the attention of the Government. This was done in the United States some thirty years ago, when Julius Stirling Morton inaugurated the Arbor Day in the State of Nebraska, in the year 1872. The State Legislature took it up, proclaimed a State Holiday for planting, and gave prizes and land; the result was that in the State of Nebraska alone more than *six hundred million* trees have been planted since 1872. The movement soon spread to the other States, with the result that enormous numbers of trees now grow and flourish in America that never would have been planted but for Arbor Day.

Acting on this great example we confidently appeal to all the bishops and clergy of Ireland, schoolmasters, county technical instruction committees, the representative bodies, borough councils, members of the Gaelic League, and the general public, to focus public attention on this subject by co-operating in the foundation and celebration of an annual Arbor Day.

After careful consideration the society recommends the last three days of October and the first four days of November as the most suitable week in which Arbor Day should be celebrated, and the local bodies may select any day within that week, or in fact during the month of November, as may best suit their own locality. This week was also selected by the Gaelic League, and is, on the whole, the best time in which to carry out planting operations.

It is desirable that, where possible, individuals should combine together for the purpose of planting their trees in suitable groups. Trees thus planted would have a much better effect than if dotted about as isolated specimens, and more widespread interest in the movement would be aroused.

We believe the idea would be warmly taken up by the people of Ireland, and that the trees so planted would not only be saved from molestation, but would be watched with pride and pleasure as they grew in beauty and luxuriance.

Ireland, once called "*Mis na Fidha*," the Island of the Woods, and praised by bard and poet as the beauty spot of the world, now lies under the stigma of having the least percentage of land under trees of any country in Europe. Arbor Day would, we believe, have the effect of bringing about such an extensive planting of trees as would take away this reproach, and regain for us our ancient fame amongst the nations.

Where any doubt or uncertainty exists the Irish Forestry Society will be pleased to advise as to the best means to adopt to carry out the idea of an Arbor Day, and will be glad to give expert information as regards the kinds of trees best suited to any particular soil or position.

It is desirable that the society should be informed of any Arbor Day celebration which may be organised throughout the country.

The response to the society's circular last year was extremely gratifying, the result being that many successful celebrations of Arbor Day took place throughout the country, thousands of trees being planted; whilst at Bray His Excellency the Lord Lieutenant and the Countess of Aberdeen took the leading part and great personal interest in the promotion of the movement.

SOME SUGGESTIONS.—As a few among many objects which may be carried out by an Arbor Day celebration, the following may be cited as examples:—

1. Corporations might plant the principal streets of a town or any waste land under their control.
2. Schoolmasters might beautify the surroundings of their schoolhouses or playgrounds.
3. Many cemeteries and burial grounds throughout the country, which at present are bare and neglected, could be planted with trees and shrubs, and by this means be very greatly improved in appearance.
4. The anniversaries of notable historic events could be commemorated by the planting of clumps of trees in suitable places.
5. The surroundings of churches, hospitals, convents, workhouses, factories, creameries, &c., all lend themselves admirably to the purpose of adornment with trees and shrubs.
6. Individuals might plant around their own houses, each member of a family planting one or more trees.

The Department of Agriculture issue several leaflets dealing with the planting of trees for profit, shelter or ornament, and any of these will be sent, post free, on application to the Secretary, Upper Merrion Street, Dublin. The most useful are leaflets Nos. 65, 66, 68, and 70.

* A Manifesto issued by the Irish Forestry Society, 12 College Green, Dublin.



The Month's Work.

Flower Garden and Pleasure Grounds.

By E. KNOWLDIN, F.R.H.S.

"Amid thy silent hours

"Tis sad but sweet to dwell,

Where falling leaves and fading flowers

Around us breathe farewell."

THEN AND NOW.—In this country of contradictions, with its excellent climate and "wretched" weather, nature is kind to us in November, but, in the words of an old gardener when we remarked how kind and amiable the lady was with whom we had just had an interview, he replied—"Yes, none more so, but she can be otherwise," and—no matter, those are pages of the past, yet, out of that past comes the memory of a winter which set in with intense frost on the eve devoted to apples and nuts, colcannon, and barm-bracks, and other seasonable fruits, which lasted till—well, till it went away, but its going left little behind it in either flower garden or kitchen garden, whilst the pleasure grounds were denuded of a lot of things we call hardy. With apologies for the digression there was too much of the farewell, and of plumbers who often took leave yet they were loath to depart, and too little of the pleasantries of present day Novembers.

SECOND SIGHT.—The flower garden now is a blaze of beauty—in the mind's eye, with its well stocked beds of bulbs, wallflowers, arabis, alyssum, aubretia, and all the flowers that bloom in the spring all cleaned up, grass-rolled, and literally swept and garnished. How thoroughly enjoyable it is, bare as it may be to the common eye is amply testified by the man who has done it as he tells us, "there are two hundred tulips in that bed," "countless crocuses lining this border," and so on over the whole range of the flower garden, and we see it as he sees it, in the glory galore of its spring possibilities. No matter what it is now, and no matter that the plenary pleasure of anticipation may never be wholly realised, he is thoroughly enjoying it in the consciousness of good, sound work, and we think as we see the fair vision through *his* eyes what a blessed thing is this second sight with which gardeners seem peculiarly gifted.

DOUBTFUL DOINGS.—We are looking at the flower borders in much the same way as we saw our friend's flower garden—the flower borders in a dozen gardens, nevertheless, and figuratively hear a dozen apologies for their untidiness qualified with the assurance that now the spring bedding is done they will be taken in

hand, and it is with a sad heart we picture what that "taking in hand" will mean to at least six out of the twelve. Here *our* second sight permits us to see the orthodox trimness which will result under the savagery of the tidying hand when the spreading clumps of Michaelmas daisies, each with a stake driven through its heart, will be manacled tight round the waist like Sairey Gamp's "broolly." Every bit of dead or dying foliage, nature's protectors, will be shorn off to the ground level and the whole thing left "clean and tidy." Heaven forgive the perpetrator of such deeds, we can't, although he has the excuse of that similar sinner of whom Crabbe wrote: "Habit with him was all the test of truth, it must be right, I've done it from my youth."

NOW OR NEVER.—How is it we still find such bulky heaps of bulbs in our seedmen's windows? Surely, we asked, "your supply far exceeds demand?" "No," we were assured, "there are heaps of orders yet to come in," and that set us thinking as to whether the pleasure grounds for which we pleaded last month had been forgotten, especially with heaps of daffodils still denied their natural rights, and countless crocuses pushing their ivory heads up from their brown rotundities as if wondering what had happened. Nevertheless, there is consolation in knowing that the pleasure grounds in several places have recently had a good amount of brightness buried in their bosoms for the first time in this direction to beam forth in spring, and we cannot but think that the plant lover who admires nature in her happier moods, as she looks to man as her minister for help, will not deny it.

ANOTHER WORRY.—We were privileged to offer a few planting suggestions in the September issue, and now the planting time is with us for carrying out anything intended in this direction. We do not say the time is at hand, but actually with us, and we take it, few want to be told of the advantages of early planting when immediate root action is induced by comparatively warm soil conditions, and the tree or shrub is to a more or less extent established and ready for a start without delay when the spring call comes. As we make our holes so will the plant thrive, other things being equal, and we say this in the teeth of the Woburn worry which would have us infer that trees do better for been shoved in anyhow. We may be wrong, but what the Woburn experiments appear to teach is that firm planting is the crux of the question. The pudding-basin hole with its concave bottom we will have none of, and the taking out of holes should be in such a manner that they are actually larger at the bottom than at top, but plant firmly, stake securely, if necessary, and plant now.

MORE TROUBLE.—We neither minimise the labour involved nor grudge it when particular objects are in view, and an ideal is before us. For instance, one planter some years ago thought it worth while to take out a hole some six or seven feet deep and double that area merely to plant a pampas grass: and what did he get for his pains? Well, the results were a noble clump which at this season sent up its plumes but a few inches short of twelve feet, and when we see a poor little starveling pampas, as often seen, we say, look on that picture and look on this. Both the pampas, arundos, and

bamboos, by the way, are best suited by late spring planting, but what a host of starvelings or mediocrities our pleasure grounds show for the want of a little primary trouble. With all apologies to Woburn and credit to it for the *useful* hints disclosed in its experimental work, we have a horror of woburnising in the pleasure grounds.

AND A NUISANCE.—What a nuisance the falling leaves are now in the shrubberies and pleasure grounds! What a blessing when methodically collected and stored for use! Everything in plant life seems to enjoy leaf-mould. Personally, we can never see anything objectionable in the appearance of any place under its mantle of fallen leaves awaiting till the bulk are down for collection and storage. We have, in fact, come to regard the leaf harvest as an indispensable factor in the garden economy, but there are two sides to the story, as there are to most stories, and we grant that fallen leaves on damp avenues must be kept cleared, or they *are* a nuisance. Collecting methodically, we said, because we see places in which this is done, and regarded cheerfully as mere routine work of the season. No one grumbles at the trouble of gathering and storing a good crop of apples only in the normal way of all good gardeners. It is in such places, where men of method rule, we find what is known as leaf yards, established in various secluded parts of the shrubberies in which the leaves fallen over contiguous areas are stored at a minimum of labour. And the leaf yard after all is but a very simple matter, being merely some hidden nook easy of access, shut in by the surrounding evergreens, where the leaves can be stored in a manner that they can be turned in winter as opportunity affords, and so ordered that from the annual harvest there is always a stock of the precious material in all stages.

The Fruit Grounds.

By A. BARKER, Carrigoran, Newmarket-on-Fergus,
Co. Clare.

NOVEMBER should be a very busy month with the fruit-grower. It is universally agreed that this is the most favourable month of the whole season for planting of all kinds of fruit trees and bushes, for root-pruning, lifting, &c. So where there is much or little of this work to be carried out do not lose a single opportunity for pushing on the work to the fullest extent possible during this month. The very generally favourable weather of September and first half of October, with consequent splendid finish to the fruit crop and fine weather for storing same, should give quite a genial impetus to the work of planting, &c., during November. I never saw apples and pears make such marked improvement during above-named period as they have done this year, nor so little of high winds to disturb the fruit. Here in September we only recorded 1.32 of rain (our average September rainfall is 3.10), and we had a great number of calm, sunny days which had a very gratifying effect after the melancholy weather of the previous six or seven weeks. In August we recorded rain on twenty-eight days, in September only on seven days. This unusually fine spell of autumn

weather has had a most pleasing effect on the wood and fruit buds. Fruit buds at this time present a remarkably well-finished appearance. The advice I gave last month about root-pruning and lifting of fruit trees in unsatisfactory condition is equally applicable during this month, and this work should now be got through as expeditiously as possible. Here we have already got through a good deal of root-pruning and lifting in a very satisfactory manner owing to the uncommonly suitable weather conditions. An early finish to this work will allow of immediate attention to the planting of fruit trees and bushes on their arrival from nursery; for removing trees and bushes already in hand, or for thinning such as may have been thickly planted with a view to future extending of plantations of trees or bushes. In case of new plantations of fruit trees it may safely be assumed that the trees have been ordered or personally selected, and the ground prepared on similar lines to my advice given in IRISH GARDENING for September, and granted this, planting can be proceeded with rapidly as soon as the trees are in hand. At planting be careful to cut over all strong roots with a good sharp knife or secateur, to clear away damaged ends and roots broken in lifting trees; also shorten any thick fibreless roots that may be met with. Be careful not to leave the roots too long exposed to drying winds or sun, and if the roots appear unduly dry on being unpacked it is very advisable to place them in water, and allow them a few hours to soak previous to planting, or douché them heavily with water. Pyramids and bushes on Paradise stocks should be planted deep enough to cover the union with stock. Trees on other stocks should be planted with roots three or four inches below surface. Pyramids and bushes if well furnished with roots may be planted without stakes, provided the ground can be very firmly trampled, otherwise they must be staked at planting. All standards or half standard trees must be securely staked as planted. Pyramids and bushes are most commonly planted ten to twelve feet apart; standards at fifteen to thirty feet apart, the greater distance when it is intended to grow other crops between rows for some years, or in grass orchards. Horizontal and fan-trained trees on walls are generally allowed fifteen to twenty feet apart, and a few cordons planted between, to remain so long as there is room for them. The afore-mentioned instructions are applicable when planting in ordinary gardens in lines or separate trees. Where separate trees or single trees are to be planted the ground should be in thoroughly good condition, or poor starved ground should be made so by a liberal addition of new loam or good, rotten manure. If the ground be clayey and retentive add also a little lime or mortar rubble and leaf mould. If new trees are to be planted where old trees have existed for a number of years remove a good quantity of the old exhausted earth and replace with new, or considerably improve the old earth by addition of new materials. New plantations of all kinds of bush fruits may now be made; these should be planted on good, rich ground, six feet apart each way. Raspberries should also be planted in lines on good, rich ground (raspberries are shallow rooters, but gross feeders, requiring liberal manuring). The lines should be six feet apart and the stools two

to three feet apart, according to the grossness of the variety planted. Three lines of wires should be strained along the rows for tying the new canes to, the first wire one foot from the ground, the top one five or six feet, according to height the canes of new variety may grow. It is also advisable to no longer delay cutting out old fruiting canes from existing plantations, and tie the new canes securely to stakes or wires, which ever may be in use. When new plantations of raspberries and bush fruits are being made, where birds are troublesome, it is a good plan to plant raspberries, gooseberries, red and white currants on the one plot or square, and wire them in completely with wire netting to exclude all birds, winter and summer. The initial cost would be recouped in a few years by the increased amount of fruit gathered and the abolition of the trouble and cost of annually covering with string netting, which must be adopted where ripe gooseberries and currants must be provided, and, personally, I do not believe that there is any necessity for admitting tomtits, &c., to the bushes in winter, for they most assuredly do more harm than good in most cases.

The pruning and training of all kinds of trees in the open and on walls should be proceeded with and pushed on at every favourable opportunity after the leaves are all fallen from the trees. The advice most generally given as to the course of pruning is to take bush fruits first, and then proceed with larger fruits; but where any spraying is contemplated (and this should be in every garden where fungi or insect pests exist) I would recommend pruning the larger fruits first (but do not prune newly planted trees) so that the spraying may be done on the first favourable opportunity, and especially so where apple and pear scab has been prevalent (and it has been very much in evidence this year). In such cases, where practicable, rake the fallen leaves from about the trees, and either turn them or bury deeply (but by all means burn the prunings). In pruning cut away all and every diseased or weakly spur, and all infected young wood that can possibly be spared, and afterwards well drench the trees with a mixture composed of 1 lb. of pure sulphate of copper to 25 gallons of water. The sulphate should be tied in a piece of coarse canvas, and suspended in the water while being dissolved, taking care to keep the solution well stirred up when using. This spraying also applies to wall trees where pear scab has been prevalent.

If bush fruits were gone through as advised in July number of IRISH GARDENING, the bushes will not now need so much pruning as where they have been left altogether for winter pruning. All the wood will also be in a much better ripened condition, with stronger and more fruitful buds for another year.

Black currants should have badly placed and weakly branches cut completely out; the centres of the bushes should also be well cleared out, leaving only a fair amount of the best young shoots full length to produce next year's crop. Throw out and burn any bushes infested with mites (or big bud) and fill up their places with clean young trees. Gooseberries, like black currants, produce the best crop of fruit on the current year's growth, and may be pruned much the same as black currants, especially if fine fruits are preferred to heavier crops of medium fruit. Gooseberries will also

produce good crops on old branches with the young growths spurred in, or cut back a few buds at base. Red and white currants produce their crops on spurs principally, therefore these should have the young growths cut back to a few buds at the base; weakly and ill-placed branches must be cut right out. The leading shoot on branches may have half to a third of their length cut away in bushes that are not fully grown. It is a good plan in fully-grown bushes to leave a few young branches shortened, and when these reach fruiting condition they may take the place of old, exhausted branches, which may be cut right away.

When pruning wall trees that have filled their allotted space, cut away weakly, ill-placed, and overgrown spurs, and shorten young shoots to three or four buds. Trees that are extending should have weakly spurs cut out, and also the young growths the same as in older trees; the leading shoots may be cut back to from half to one-third of their length, taking care to cut at a side bud pointing in the direction that the ensuing growth should take. Ties and shreds too old to last over another season must be replaced by new ones; take great care in tying and training of the young branches. Wall trees well trained, fully developed, and carrying good crops of fine well-coloured fruits are very striking objects, and plainly indicate the care and skill that have been expended to attain such results. Morello cherries on walls must have a reasonable amount of their young growths tied in, as the crop is produced on these young shoots; surplus growths may be cut clean away. Cherries are subject to attacks of brown rot, which is principally indicated by the presence of dead branches, and the young shoots frequently die away after being pruned the previous year. Where this disease is present the trees should be sprayed after pruning with the following solution:—Sulphate of iron, 25 lbs.; sulphuric acid, 1 pint; water, 50 gals. Mix the spray in a wooden tub. First put in the sulphate of iron, then pour on the acid, and add the water slowly. The trees should also be sprayed as the foliage expands in spring, with weak Bordeaux mixture.

Peaches on walls, if they have been properly treated during the summer, will only need to have the young fruiting shoots nailed or tied in and old bad ties or shreds renewed.

The advice regarding pruning of wall trees may be very much the same for trees in the open, such as bush and pyramid trees. In fully grown trees young growths should be gradually brought up, and as these get into good fruiting condition some of the older branches may be sawn out. Standard and half-standard trees should only be moderately pruned, cutting out weakly and interlacing branches.



HORSE RADISH.—Ground should be prepared for this by trenching $2\frac{1}{2}$ feet deep and placing a layer of rich manure at the bottom, and again at a depth of 18 inches. Propagation is carried out by using root cutting, about 3 inches long, including at least two buds or eyes, in order to secure rapid development. These sets should be planted 18 inches apart and 18 inches deep. When the shoots appear above ground next May, hoe the soil over to keep it open and free from weeds.

Our Native Waterside Plants.

A POND or stream is a great asset in a garden or pleasure ground. There is a peculiar charm in water or moisture-loving plants, and very effective planting can be done where opportunity offers in the way of suitable ground. Quite a number of native plants may be utilised in furnishing the margin of water-ways or lakes with delightful clumps and masses of luxuriant and decorative vegetation. The greater willow herb (*Epilobium*), a tall plant (six feet or so), with long spikes covered with rosy flowers, is common everywhere, and is quite easy to establish. Purple loosestrife (*Lythrum*) is also tall, and when grown in clumps and covered with bloom demonstrates the value of common plants in picturesque gardening. Loosestrife (*Lythrum*) is another tall herbaceous perennial closely allied to primroses, and carries elongated spikes of beautiful yellow flowers. It loves to grow quite close to the water. Monkey flower (*Mimulus luteus*) found wild in many districts in Ireland, is another useful perennial to plant in wet places. Then what plant is more graceful, with its tall, slender stem, and whorls of thread-like branches, than *Equisetum maximum* (*Horse-tail*)? Planted along the margin of a pond it gives an effect altogether peculiar to itself. The iris or yellow water flag, of course, must not be forgotten. It is easily established and one of the most useful. In boggy ground quantities of marsh marigold (*Caltha palustris*) may be planted. Its rich, yellow flowers in sunlight, seen against the large, deep, green, glossy leaves, form a picture that surpasses in loveliness anything else that you are likely to get with the same degree of labour. Also, well worth establishing are: Grass of Parnassus, cotton grass (*Eriophorum*), water forget-me-not (*Myosotis palustris*), which requires shade to develop the china-blue colour so characteristic of this unique little plant. In the water itself may be established reed mace (*Typha*), sweet flag (*Acorus calamus*), arrow-head (*Sagittaria*), and flowering rush (*Butomus umbellatus*) in the shallows, and along the margins clumps of the great reed (*Phragmites*), bur reed (*Sphagnum*), water dock, and great spearwort, with some of the taller sedges, whose drooping inflorescences add simple grace to the waterside picture. These are all wild plants as we have already said, easy to obtain and requiring no special knowledge to establish. There is one thing especially to remember—plant in lavish masses as nature does, and avoid single mixed planting. It is not the number of kinds brought together that will produce a pleasing picture but the judicious selection and grouping, so as to give a natural appearance to the stream or lake, and not that artificiality resulting from a "dot" or formal system of planting so fatal to all wild-gardening schemes. Again, if the pond is small it would be a great mistake to cover it with vegetation, as a discriminating writer on this subject says—"when the added beauty of water is vouchsafed to the pleasure grounds, it is of the first importance that it should remain a clear mirror, reflecting the various forms of trees, the blue sky and fleecy

drifting clouds, that the little breezes should ruffle its face. Gauzy-winged dragon-flies double their images in the still surface and swallow's wing ever and anon stir it into widening rings, but if water vegetation is allowed to spread and cover the pond these felicitous incidents can no more be witnessed."

Notes.

THE VALUE OF GARDEN RUBBISH.—Most, if not all, soils may be improved by the application of burnt garden refuse. It not only improves the texture of the soil but supplies additional plant food, and incidentally acts as a check upon the spread of hurtful pests in the garden. Charred vegetable material supplies carbon, which is a great sweetener of soil, and ash, which yields, amongst other things, valuable potash salts. Burnt vegetable refuse is excellent for asparagus beds, and indeed all crops seem to derive benefit from it. It is also good as a surface dressing for lawns. Mixed with soot it acts as a great stimulant to most crops, even in well-manured garden soil. The remains of a bonfire mixed with farmyard manure, and used as a fertiliser, will convert a barren plot into a fertile one. This is the time of year to gather up all the burnable, useless material about a garden, and with the aid of fire to convert it into good fertilising material.

APPLE PEEL TEA.—It is pointed out by certain food reformers that apple rind contains an acid that may serve a very useful purpose in the body. This acid, it is said, has the property of dissolving uric and other poisonous acids liberated in the blood. It has been even urged that the rind is the most valuable part of the apple! Apple peel tea is being recommended in some quarters as being a beverage of the greatest value as a "purifier" of the working tissues of the body. If the plain peel is not tempting enough, then the following directions may be followed:—Take three or four large sour apples and grate them down, including, of course, the skins. Add a quart of boiling water, and simmer in a porridge (double) pot until soft. Season with lemon juice, grated lemon peel and honey, and serve hot.



International Horticultural Exhibition.

IT has been decided to hold a great International Horticultural Exhibition in London in 1912, and arrangements are being actively made to ensure certain success. The Council of the Royal Horticultural Society has so far financed the concern with a donation of £1,000, and with great generosity and public spirit have promised a further £4,000 towards a guarantee fund. A company will be formed with a nominal capital of £1,000, to be contributed in £1 shares. The shareholders will have no privileges or profits, only the satisfaction of aiding in a great educational exhibition.

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IRISH GARDENING

VOLUME V.
No. 58

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

DECEMBER
1910

Christmas Trees.

By A. E. MOERAN.

I SUPPOSE most of us have one favourite kind of tree, and we flatter ourselves that our judgment has selected the species that really is the most artistically perfect in all the myriad details that blend and harmonise to form the thing of beauty that is the object of our cultured admiration.

With some it is the lordly oak, sternly up-raising his rugged arms in stout defiance of centuries of time and tempest. With others it is the queenly beech, sweeping the diamond dew drops with her trailing skirts of wondrous workmanship and colouring. Through all the range of trees our fancies go. From the grand and sombre cedar, the chiefest ornament of some stately park, to the dancing, feckless, silver-decked birch that clings to the lone hillside where the bracken ends and the world of heather begins. It is strange that there should be such diversity in our mature opinions, because there was a time when we were all agreed that there was only one tree that really mattered at all, only one tree that possessed all

the attributes that could be desired by the heart of man or woman (little men and dainty little ladies, but with big, big hearts)—and that tree of course was the Christmas tree.

In this country even still a Christmas tree is an event, an epoch. It is even conceivable that in some semi-civilised families a whole precious Christmas time might pass without the appearance of this triumph of the arboriculturist's skill.

It is from Germany that we first learned about Christmas trees, and there each member of the family will have one for him or herself, a big one for "die vater" and "der mutter" and a little one each for Hans and Gretchen and Fritz. So they are far in advance of us in these important forestry matters.

The species is difficult to classify. To my youthful eyes the height appeared gigantic, quite one hundred feet, and almost up to the ceiling. The branches filled half the room, and were laden with a crop of marvels which were, truly, as the newspapers say, too numerous and varied to mention. Even the tub from



which this noble tree uprears its glittering head is tastefully bedecked with by-products, such as real tricycles and dolls' houses, which the groaning branches refuse to carry. Truly, such a tree deserves to be popular, promising, as it does, vast possibilities of profit to all concerned with it, except, as I have since had reason to realise, to those who are primarily responsible for its cultivation.

Since the days when I was forcibly scoured and dressed in my new sailor suit to go to Christmas trees, I have learned a good deal about trees in general, and something of this particular one. I have learned with pain and grief that it does not grow in that beautiful tub, but is dishonestly stuck into it. I have learned that before its translation to that tub it is, as a rule, a common spruce—sometimes a silver fir—and the latter are rather the better of the two, as their branches are more regular and more rigid.

There are, by the way, quite a number of people who are long past sailor suits, and yet are a little uncertain about the silver fir and the spruce, or which is which, or what the requirements and habits of either are. These two trees really belong to two quite distinct families, and each has a number of relations, other silver firs and spruces, all over the temperate world. Both are indigenous to Europe, but not to the British Isles, and it is because this silver fir and this spruce were brought here and planted, perhaps a hundred years before any of their relatives, that they have become to us the "common" spruce (sometimes called the "Norway" spruce) and the "silver fir." The spruces all belong to the family "Picea," and one common spruce, "*Picea Excelcis*," is found all over North Europe. The silver firs are "*Abies*" and "*Abies Pectinata*,"—that's our tree has its home in Southern Europe and over into Turkey in Asia. There are silver fir forests close to the site of ancient Troy, and Vergil tells us how the Greeks built the great wooden horse "the size of a mountain," "and interwove its ribs with planks of fir," with which they overcame by guile the long enduring Trojans. The silver firs are much stiffer and more rigidly regular in their foliage than the spruces. The leaves are in a regular comb at either side of the twig, and the cones are borne upright, and are smoother and much longer than the spruce cones. In habit and

requirements they are quite different, though too often they are treated alike. The spruce must have both shelter and moisture to really thrive, and there is no more miserable object than a spruce planted on an exposed bank. Silver fir, however, does not mind how dry it is, and it will fight its way up in any wind that ever blew, provided it is not a sea wind. Silver fir is very liable to get cut back by spring frosts while young, and while young it is slow of growth, but once past ten or twelve years it grows very fast and develops into one of the grandest trees we possess. I measured one the other day, seventeen feet girth and over one hundred feet in height. How would that do for a Christmas tree, my young friends?

A Book on Orchids.

"ORCHIDS for Every One," by Chas. H. Curtis, F.R.H.S. (Dent & Sons, square crown 4to, £1 1s. net). Mr. Curtis has in this book made an altogether praiseworthy effort to popularise orchid cultivation and to induce more amateurs to take an interest in these noble flowers. The book is especially arranged as a guide to those about to take up the cultivation of these plants, and for this purpose the orchids are grouped according to their value for general cultivation, the genera being given in alphabetical order. The best methods of culture are described, and the particular needs of any fastidious species are clearly indicated. The fact that the author was formerly keeper of the orchid collection at Kew is sufficient warrant of the accuracy of his cultural directions. But it is in the extreme beauty of the illustrations that the most striking feature of the book lies. There are no less than 52 full page illustrations in colour, reproduced from colour photographs taken by Mr. T. E. Waltham, and each one is remarkably life-like and beautiful. They form a series of flower pictures such as I have seldom seen equalled. No less excellent in their way are the half-tone illustrations, from photographs by Mr. A. J. Campbell, of which there are over 40 in the book. Excepting a visit to a good collection of orchids in flower, nothing would be more calculated to induce one to take up orchid culture than these illustrations. The print and general get-up of the book are excellent, and it should form a most acceptable gift for the approaching Christmas season.



What?

Not know our garden? The only spot
In the whole wide world where there is pleasure,
And leisure,
A treasure,
That a man might seek with the whole of his mind
And never find
Though he hunted far
From the golden bar
Of the sunset back to the morning star.

—Lehmann.



Photo by]

THE HERBACEOUS BORDER, ROYAL BOTANIC GARDENS, GLASNEVIN.

[C. F. Ball.

Making a Herbaceous Border.

By C. F. BALL, Royal Botanic Gardens, Glasnevin.

THE borders of our ancestors were different to what our up-to-date mixed borders are now. Then every plant had its two feet or so of ground, and after it had bloomed the bare space remained for the year. The gorgeous geraniums and other showy bedding plants coming along altogether routed this style of gardening, and now in their turn will probably be relegated to the more or less formal and pretentious garden. The cost of storing and propagating tender subjects is an expensive matter, and many people become tired of the same monotonous blaze of colour for several months.

The hardy plant border was one of the first expressions of flower gardening, and is one of the most natural; it can be adapted to the large or the small garden, and can be made a constant pleasure to the beholder for quite seven months of the year. During this time no space of ground need be bare or idle; the scene will be

ever gay and ever changing. Once laid out and planted satisfactorily, it will be a permanent pleasure; many of the plants may then be left undisturbed, others will grow too quickly and want replanting, but it must be remembered that most cultivated plants will suffer if neglected.

The site may be a varied one so long as the plants can enjoy a free circulation of air, full sunlight, and a moderate amount of shelter from strong winds.

The border can be made on either side of a straight or curved walk or with an irregular margin, according to situation and taste, but to get a good effect for a large border the width should not be less than ten or twelve feet. Where a wall is at the back of the border, this should be covered by climbers. Evergreen shrubs form a pleasing background to an irregular border. If they are very strong-growing

kinds a trench should be opened and filled with stones, to prevent the roots entering and robbing the border. Bushes of snowy mespilus, forsythia, and small growing cherries will show to great advantage when placed against a background of dark evergreens; a prettier background for the border cannot be desired than these.

Sometimes in old gardens the herbaceous border is found in the kitchen garden, with espalier or bush apples as a background. If the fruit trees are old and worthless, instead of clearing them out plant such climbers as Dorothy Perkins rose, clematis, jessamine, and Polygonum baldschuanicum, and let these cover the stumps, for their beauty is never seen under better conditions than when rambling with uncontrolled grace over bushes. If friends are dogmatic and say they should not be in or near the herbaceous border proper, take no heed, but invite them to see the border when established.

The keynote to success in making a border is thorough preparation. Once a border is well made it will last for many years; if the soil is heavy it will require draining. Many a gardener will go to great trouble to make a vine border, yet will often starve his herbaceous plants. At the back of a border plants have to be grown fairly thick and to throw up annual stems six feet or more in height so that they require a rich and deep root run. The ground should be thoroughly trenched two feet or more deep, mixing manure with both the top and bottom spit of soil. If the soil is heavy use horse manure, and if light use cow manure when obtainable. For the front of the border garden refuse and leaves will be useful for mixing with the top spit. The stronger and gross feeding plants will be usually towards the back of the border, so that the manure can be generously applied here.

Although the habitats of herbaceous plants are so diverse, yet these plants possess great power of adaptability, and a good strong loam can be recommended for the majority. The trenching of the border will raise it above the surrounding level, and from the back it may slope gradually towards the path, the back being about a foot higher than the front.

Then comes the serious question of planting. We have now a wealth of subjects undreamt of in former years; some may be chosen for their graceful foliage, others for their delightful frag-

rance, but the majority must be showy and bright to have an effective border. Some people express very strict ideas as to what plants to use, and discard bulbs in the belief that there will be a bare space during the summer months. This need not be so, for by planting narcissi and such bulbs six inches deep, crocuses, snowdrops, and aconites four inches deep, we can have the benefit of their spring flowers, and when the leaves die off the ground can be lightly forked over and a summer blaze of portulacas or gillias, or the sweetness of the mignonette, may be obtained by sowing seeds in the soil over the bulbs. This double cropping of the ground may take place with many plants, and is the key to keeping the border furnished. Often in arranging a border the plants are just graded in heights with the taller ones at the back. This plan may be adopted for the general idea, but it is better to plant some bold growing subjects in irregular masses towards the centre or front of the border, here and there along the border, alternating with recesses of smaller growing plants. This arrangement breaks the formal line; the eye does not take in everything at a glance, but the interest is kept up all the way down the border searching for new treasures and colour combinations.

The plants suitable for the border must be left until next month.

Evolution of Draining.

(First Paper.)

By PROFESSOR JAMES WILSON, Royal College of Science, Ireland.

IT took us many hundred years to understand draining: that is, to understand why and how it should be done. Had the Romans never been forced out of Britain and Northern Europe, draining might have been well understood long, long ago, for they had advanced a good way in the subject. But they and all their works were driven back whence they had come, and the land fell back into almost as backward a state as it was in when they found it, so we had to begin again at the beginning.

But when did we begin? That question would be very difficult to answer; but this we can say, that draining of a kind similar in some points to that we now know was known and practised two hundred and fifty years ago. England and the Saxon and Scandinavian parts

of Scotland were farmed for nearly a thousand years by farmers living together in villages, around which lay all their tillage land. This land was laid off in acre, half-acre, and quarter-acre plots; and in each plot the furrow was always turned towards the centre. Thus the plots came to be higher in the centre and lower at the sides; and the hollows between two plots took the water thrown off by the ridges and carried it away as gravity determined. This ridge and furrow system of draining became common, especially in heavy land districts, and many fields can still be seen in England and Ireland having the land laid up in this fashion.

But there were places to which the ridge and furrow system did not apply. There were wet spots, springs, boggy places, morasses, and such like, that had hitherto kept the plough at arm's length and held the land about them valueless till they could be drained. To deal with such, special drains were made, and the great expositor of the work was Walter Blith, who published a book called "The English Improver Improved," whose frontispiece bore the legend "Vive la Re Publick." in 1653.

According to Blith, "Drayning" was "taking away Superfluous and Venomous Water which lieth in the Earth and much occasioneth Bogginess, Miriness, Rushes, Flags, and other filth, and is indeed the chief cause of Barrenness in any Land of this nature." To get such water out of boggy and miry places they were to be tapped by a trench or "ditch," as Blith sometimes called it, which was to lead the water away to some lower level. If the place to be tapped was of some size it was to be attacked by a ditch running well into it, or along one side or round its flanks and into these "overthwart" or cross ditches the main tapping ditch was to be led. Blith insists strongly that the ditches must be deep below the source of the water and straight—much deeper than a foot or eighteen inches, as was then common. "Carry thy Drain upon the Levell," he says, "until thou art assuredly got under that moisture, mirrinesse, or water, that either offends thy Bog or covers thy Land; and goe one Spade's graft deeper by all means. . . . Prevent as many Angles, Crooks, and Turnings as it is possible, for those will but occasion stoppages of the water, and filling up of Trenches and loss of Ground, and much more trouble than otherwise. Then thou must take

good green Faggots, Willow, Alder, Elm, or Thorn, and lay in the bottom of thy works, and then take the Turf thou tookest up in the top of the Trench, and Plant upon them with the green Soard downwards, and then fill up thy works levell again."

He also favours the bottom of the Trench, where it is shallow, being laid with stones:—"Take great Pibble stones or Flint stones, and so fill up the bottom of thy Trench about fifteen inches high, and take thy turf and plant it as aforesaid, being very fit for the Trench, as it may joyn close as it is laid down."

Draining of this kind was, of course, very expensive, and no more than was necessary was attempted.

A hundred years later the great pressure of population in Britain forced many such drains to be made. Not without complaints as to their cost, however. But one day by a lucky chance a hard working farmer named Elkington found out how the cost of such drains might be brought down. A marshy spot was surrounded by a great bank of soil which retained the water like a bowl. Elkington was cutting a trench through the rim of the bowl, as it were, and when he had got three or four feet down he wondered what the soil still below him was like, which he must cut through. One of his workmen was passing with a heavy iron punch and Elkington called for it. He drove it into the earth its full length and was pleased to find the earth soft. But he was mightily astonished to find when the punch was withdrawn that a stream of water rushed out behind it. Elkington argued that he had tapped the bottom of the supply that caused the bog and that he need dig no more. He had, as it were, pulled the bung out of the barrel, which was now what should be done to drain wet and marshy spots like those he had been attacking.

Elkington's system, or Blith's system improved by Elkington, held the field for many a year until it was improved upon by a Perthshire factory manager whose duty it was to look after a small farm attached to his factory. He showed, as we now see clearly, that Blith and Elkington were merely dealing with isolated patches of land; and he showed, not only that it was necessary to deal with almost every acre under the plough, but also how this should be done.

Roses.

By O'DONEL BROWNE, M.D.

ANOTHER rose season has passed and gone, and now we no longer look back to what has passed never to return, but strain our eyes to the one which is coming. There is one certain thing about which most rosarians are agreed, and that is that the past season, to most of us, was a wretched one. As a well-known figure in our circle of flower lovers said *re* the summer rose show, that "there were more flowers at Nelson's Pillar" than we had at the rose show, seems a trifle hard. It was not a good show, but I think we amateurs are to be congratulated on having had any good flowers there at all, seeing that the end of June and July's first week were fearfully against us. No; no one can say that the past season was a recompense to the poor amateur with his handful of plants, but there is a very different story when we consider how exceedingly well our brother growers—those doughty, dauntless trio up in the North—placed our names along with their own at the top of the tree. Such a sequence of wins as the two firms of Messrs. Alex. and Hugh Dicksons' chalked and notched on their already heavily-scored pillars will never be forgotten. First, we have Alex. Dickson winning the blue riband of rose-growers against five other firms, and thereby becoming the champion firm of the British Isles. Not only this, but on the same day, at the same show, they annexed the forty trebles—*i.e.*, three blooms of each variety—forty varieties arranged triangularly. This is the biggest class for which any firm ever competes; but what pleased me was the fact that all those who saw their trophy stand (seventy-two varieties) agreed that they were easily first, and of those seventy-two varieties no less than thirty-six varieties were raised by themselves—in fact, nursery born. Then, again, this year will ever and always remain to my memory as "Sam M'Gredy's year." Messrs. M'G. have had a wonderfully fine time of it, not by showing varieties already in commerce, though they did a bit of this game also, but by taking gold medal after gold medal, until it nearly became quite monotonous, for new varieties not yet in commerce. I have, in some few numbers back, tried to tell my readers what I mean by seedling roses—how they take such time, &c., to perfect—but suffice it to say that if my memory serves me right, I think that Sam M'Gredy & Co. have established a world's record by scoring no less than five or six "golds" this year. In some respects it is a pity that we poor amateurs find it hard to keep place and pace with this ever-increasing number of "news" which are coming into commerce, but still all old Irish rose-growers must and will feel proud of our Irish firms. Ethel Malcolm and Mrs. Maynard Sinton are roses which you will see figuring in every stand soon. The former is described as a pure white Mrs. W. J. Grant; let us pray that it will accommodate us with a climbing sport as Mrs. W. J. G. has so kindly done, or else be a better grower than the dwarf Mrs. Grant. Mrs. Maynard Sinton is claimed by the raisers to outrival our great Mildred Grant. Let us pray that this "new" will throw more flowers per year per bush than Mildred Grant. Many people are

inclined to crab and say nasty things about poor Mildred as to her shyness in flowering; two or three enormous flowers seem about the average number per tree per year; but, oh! what flowers when seen in the London show. She is a giantess, but S. M'Gredy & Sons are quite emphatic in their statement that their new rose is well able to cross swords with Mildred. The only point I have against large roses, such as these two, is that they dwarf any other variety, and make a box look uneven at a show. It is not often that the triumvirate firms have shone so well, but that they were greatly helped by the third firm is easily seen when one reads the account of the Provincial Show of the National Rose Society. Here we see Hugh Dickson at his very best, and taking the Jubilee Cup for thirty-six varieties against very strong competition for the fourth (I think so, certainly the third) time in succession; truly a remarkable feat. That was a great day for those brothers at Belmont, and we should be justly proud of them. Besides this they also won some "golds," one of their "news" being Leslie Holland, a dark-red Hybrid Tea, which is a good grower. This rose, I believe, is to be sent out in the spring, and will rapidly come to the front. Its colour and perfume are all that is essential to make a good rose. It is a case of a bad parent plant (if I know the parentage aright) making a good seedling, and Leslie Holland is all this. They showed this rose in several classes for twelve new roses—dark, and in every case they scored, truly a remarkable record, not, however, unprecedented, as they did the same thing before with J. B. Clarke. Truly, our brothers in the North are "streets" ahead of all the trade on this year's count—long may they be so!

Current Topics.

By C. F. BALL, Royal Botanic Gardens, Glasnevin.

THE present year has been a bad one for fruit growers, with few exceptions, throughout Ireland. In such a year a retrospect is especially valuable, for some varieties of fruit stand out in spite of adverse conditions, and have borne fair crops which naturally command a good price in a time of scarcity. Intending planters will do well to give such varieties consideration when ordering trees. The varieties of apples which Mr. Moore notes as having produced the best crops this year in Ireland are Bramley's Seedling, Lane's Prince Albert, Lady Henniker, Golden Noble, Domino, and Grenadier.

Among pears William's Bon Chretien, Beurré Hardy, and Durondeau are three sorts which have done well. In some gardens cordon pears and apples have fruited well when trained obliquely upon wires stretched like a fence from post to post. For small gardens, where space is very limited, this plan can be recommended. For this purpose the trees should be obtained grafted upon the broad-leaved English Paradise stock in the case of apples and upon the Quince in the case of pears, if upon the free stocks they grow too strongly and need constant attention in regard to root-pruning.

Among currants Victoria and Boskoop Giant are to the front; the latter variety is said to be less subject to

attack of the currant-bud mite than any other black variety.

Whinham's Industry has been the best gooseberry this year; it is very prolific, and useful for picking while still green.

The gooseberry mildew seems now to be held in check by preventive methods. When it does appear it is essential to cut and burn all the tops of the shoots, and to spray the trees at regular intervals with sulphide of potassium solution; it is made by dissolving 1 oz. in 2 galls. of water. This may be complained of as an expensive process, but it is the only way unless one wishes to dig up the gooseberry bushes and burn them. If further information is desired regarding the American gooseberry mildew apply to the Department of Agriculture for Leaflet No. 76.

We are pleased to note that the Ard Cairn Nurseries, near Cork, staged a choice collection of orchids at the last show of the English Royal Horticultural Society, and also received an award of merit for a native apple named Ard Cairn Russet. In W. B. Hartland's catalogue it is given as a sweet dessert variety, fit for use from December to April; in this catalogue quite a small collection of native Irish apples are given which have been hunted up in old Irish orchards. Mr. Moore, one of the judges at the last English Fruit Show in London, remarks that the Irish exhibits were good in all respects, size, shape, colour, and gained prizes in the open classes.

A fruit grower who has had experience in England and California recently visited Ireland, and makes the statement that there is land in this country which will grow as good apples as any he knows in either of the above countries. This may seem very high praise indeed, but those who are competent to express an opinion say that Ireland can produce culinary apples equal to any that are grown.

Too high praise cannot be given to the Ulster Fruit Growers' Association, for, with the help of the Department of Agriculture, they have demonstrated that not only can the fruit be grown, but it can be packed and graded as well as, or even better than, the Canadians do it.

A recent visit to Messrs. Calvert & Lundy, Fleet Street, Dublin, was a surprise; this firm is now wholesale agent for Dublin and district for the Ulster Fruit Growers' Association. Mr. Calvert has had a wide experience in handling the better grades of American apples, and is certainly to be congratulated on the manner in which he is able to introduce Irish fruit to many of the best grocers who formerly refused to buy Irish apples owing to the unsatisfactory way in which the goods were placed on the market.

All goods of the Ulster Fruit Growers' Association have a green label bearing the Red Hand of Ulster, on the palm of which is a cross and the letters U.F.G.A. Upon the label is given the name of the apple, the grade, and the nett weight of the contents. The Association's label is a guarantee that only one kind of apple is in the package and that the contents are just as

good whether at top, bottom, or centre.

A great step towards success is the clean, new, non-returnable package—even these are Irish, being made at Portadown. The standard barrel holds about 10 stones of apples and the standard box about 3 stones net, both packages being made of seasoned non-odorous wood. Three grades are adopted for apples. The method of grading adopted is by means of

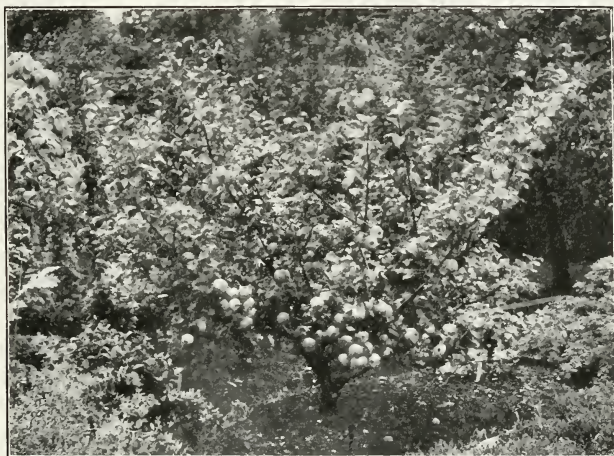


Photo by]

[C. F. Ball.

A WELL-TRAINED SPECIMEN OF APPLE—NEWTON WONDER.

rings. For large varieties like Bramley's Seedling those labelled "select" will not pass through a ring having an internal diameter of $3\frac{1}{4}$ inches. "Firsts" are those which will not pass through a ring of $2\frac{3}{4}$ inches diameter, and "Seconds" not to pass through $2\frac{1}{4}$ inches. In addition, the Association's rule is that the select grade must be "fruit well grown, shape normal, practically free from blemish, injury, or disease, skin unbroken, no decay." In the first grade the rule is similar except that surface blemish from scab or spot is allowed up to a total surface area not exceeding the size of sixpence.

Never have I seen better fruit marketed than four of these barrels of "select" grade Bramley's Seedling and some Newton Wonder at Messrs. Calvert & Lundy's. The fruits were clean, sound, and finer than Canadians, and of course for cooking Bramley has few equals.

It is satisfactory to know that the efforts of the Ulster

Fruit Growers' Association are being appreciated, and good prices realised. Agents have now been appointed in Belfast and in some centres in Great Britain, and some fruit has been exported to South Africa.

November and December are two months during which the garden looks comparatively dull, so that any effects whereby this period can be enlivened are worth noting. The value of the pampas grass for autumn is not generally appreciated; in a scene where evergreens abound it will, with its light and feathery plumes, do much to lighten the landscape. Many good varieties, both white and pink, are now in commerce.

The brown stems of such plants as the tall polygouns and the brown-faded flower stems of astilbes should be left; by cutting them down it only gives the landscape a more desolate appearance.

The crimson dogwood stems are now a feature in many gardens, but the yellow-stemmed dogwood (*Cornus stolonifera* var. *flaviramea*) is often forgotten when planting.

In gardens where lime is not present in the soil *Andromeda Catesbaei* (or *Leucothoe* as it is now called) should be planted. The evergreen foliage gets a beautiful reddish brown colour through the winter; the arching branches last over a month when cut.

Mr. Gumbleton of Queenstown writes that he has the true *Aconitum volubile latisectum*, which is very interesting; for the plant *Vilmorini* sent out under this name has proved to be a new species, and is called *A. Vilmorini*. In flower they are said to be similar, but the foliage and growth differ.

The Planting and Care of Hedges—II.

By G. O. SHERRARD, A.R.C.S.I.

IF the quicks are strong ones they should be cut back after planting to within two or three inches of the soil line; in the case of weak quicks, it would be better to leave them for a season before cutting back. The plants will then require no further pruning for four years, at the end of which time they should be cut to within two feet of the ground. The object of leaving them unpruned for four years is to get the plants thoroughly established and in a state of vigorous growth, so that when again cut back they may break very strongly and form a solid base to the hedge. After the fourth year the hedge should receive an annual trimming in July or August, and care should be taken to keep it narrow at the top and broad at the base in the shape of an inverted V. If a thorn hedge is allowed to become too wide at the top or at the shoulders it invariably become bare and gappy at the base owing to overshadowing. Farm hedges are often trimmed with a billhook, while for garden hedges a shears is used. The former tool must be kept very sharp when in use, and should only be entrusted to an experienced man, otherwise the shape of the hedge will be spoilt for years. The treatment of a beech hedge differs from that of a hawthorn in that it should not be pruned or trimmed until it has attained its full height, and then only trimming

will be necessary. Such hedges as beech, holly, or yew may be made of a square shape if desired, for these plants are all shade bearers.

It is of great importance that the base of a hedge, especially of a young one, should be kept clean and free from weeds. Not only do weeds rob the hedge of moisture and nourishment, but the climbing species, such as cleavers and convolvulus, clamber over it and smother the young growths.

An old hedge, even when well kept, usually tends to get too broad. This may be remedied by cutting one face of the hedge right back to the main stems of the quicks, cutting it in half as it were. The uncut side of the hedge still acts as a fence while the other side is making growth, and when the growth is strong enough to form a fence the process may be repeated on the side at first left untouched. Small gaps in the base of a hedge may be conveniently filled by plants of beech or hornbeam, which will stand the shade of the hedge above them. In the case of a badly neglected hedge—a hedge gone wild, such as you often see along country lanes in Ireland—more drastic methods of treatment are necessary. There "laying" should be resorted to, as it causes fresh growth to come away from below, and at the same time a fence is provided during the period of growth. The process may be briefly described as follows:—

- (1) The briars, &c., are cleaned out from the bottom of the hedge, which is trimmed up roughly on both sides.
- (2) The youngest stuff is cut three-quarter through and bent down horizontal, while the old stuff is cut out altogether with the exception of a stout stump every three or four yards. These stumps are left about three feet high, and the laid stuff is twined through them.
- (3) Stout stakes are then stuck in, about one foot apart, on alternate sides of the laid stuff.
- (4) The hedge is then "rithed"—i.e., hazel or thorn rods are plated between the standards. This keeps the laid branches in position and forms a top rail, so to speak, for the fence.

"Laying" must be done before the rise of the sap, and a layed hedge may be trimmed in the ordinary way the following September. Often in the south of England a layed hedge is not trimmed, but allowed to grow for two or three years and then laid again. Where shelter for cattle is desired this is probably the better plan.



I SHALL speak of trees as we see them, love them, adore them in the fields where they are alive, holding their green sunshades over our heads, talking to us with their hundred thousand whispering tongues, looking down on us with that sweet meekness which belongs to huge but limited organisms—which one sees in the brown eyes of oxen, but most in the patient posture, the outstretched arms, and the heavy-drooping robes of these vast beings endowed with life but not with soul—which outgrow us and outlive us, but stand helpless—poor things!—while nature dresses and undresses them like so many full-sized but under-witted children.—*Oliver Wendell Holmes.*

The Green Field.

By PÁDRAIC COLUM.

THE field I am thinking of is one of ten thousand. Its fences are neglected, its wooden gate is broken. It is called a pasture field, because grass grows where there were once furrows, but the only creature that pastures there is the horse that is turned out to graze at night. Motionless, perhaps too tired to lie down, he stands under the sign of the plough. The field would be lifeless in the mind, only one remembers that a child once found a hedgehog in its ditch. Then life comes into the field. Out of the hedge the briar shoot came green and slender. Young ash-trees were in the hedge, and they added a span to their growth each year. With the growth of the young ash-tree the child's mind or the youth's mind is in most sympathy. There were other trees in the hedge, and in the good days of sunlight they made long shadows across the field. In April the faint sloe-bloom came on the hedge—first sketch, as it were, of the magnificence of hawthorn. Then came the hawthorn. Before its coming a primrose had been seen in the ditch, and a robin's nest had been found. The ragwort grew up in the field, making a mass of yellow that became more exuberant, more disordered, as the autumn went on. It was in its fulness of colour when the foxglove had withered down in the ditches.

As in thousands of others, there was a thorn bush in the middle of this field. When the field was tilled, no one ploughed or dug near its roots, for dread of those who were associated with the tree. It stood undisturbed in a field of corn as it now stands undisturbed in a field of sparse grass—a memento of a forgotten faith, a survival of the primitive cult of trees and tree-spirits.

The ragwort has withered, leaving sturdy stalks in the field. The grass becomes sparser. In the field the living forces sleep, as the frog sleeps, wrapped in his mud in the bottom of the pond, as the dormouse sleeps in its hole in the ditch. The mist comes down on the field, and the blackbirds, flying along the hedges, shake their metallic notes against the end of the short day.

The little field is cold, bleak, and barren. It depresses as the sight of a ruined house depresses one. Man's interests have forsaken the field. It seems an outcast—a step-child—

the step-child of nature or of man. The old horse no longer grazes there. In the sunlight a few shiny-plumaged crows go through the field.

It is part of our pride to hold land, but it is no part of our pride to make use of it. There is an uneconomic distribution of land that leaves stray fields away from the business of the farm. Land is passed on to some who have no interest in working it. Waste and derelict fields are left to add to the bankrupt look of the country



A NEW BOTANICAL MAGAZINE. — The Royal Botanical Society of London has started the publication of a quarterly official organ under the name of *The Botanical Journal*. Judging from the first number, this new magazine should prove of extreme interest to economic botanists and to gardeners in charge of representative collections of plants. The contents include articles on Art in the Garden, The Victoria Regia Lily, The Flora of Victoria, Forcing Plants by Warm Baths, Book Reviews, &c. One great feature of the present issue is a series of four plates, reproduced from colour photographs taken by Mr. E. T. Butler in the society's garden in Regent's Park. Two of them, illustrating the evolution of the chrysanthemum, are very beautiful, and we hope that the series will be continued. The price of the journal is one shilling.

ART CALENDARS. — A Garden Lover's Calendar and a Nature Lover's Calendar, printed in blue and in green with rubrics, on good paper with fancy parchment covers, white with silver lettering, beautiful little books, keepsakes for the year 1911. With coloured frontispieces, well done. On the left hand pages, garden poems and garden prose, nature poems and nature prose, well chosen. The pieces in the Nature book are better than the others. The most original and praiseworthy omission is T. E. Brown's garden poem. The most original quotation is the wonderful flower passage from William Blake, beginning—

Thou perceivest the flowers put forth their precious
odours,

And none can tell how from so small a centre comes
such sweet,

Forgetting that within that centre eternity expands
Its ever during doirs . . .

and ending—

“Every tree

And flower and herb soon fill the air with an innumerable
dance

Yet all in order sweet and lovely . . .”

The Nature book has many fine, rarely-quoted poems. For February, to give an example, Coleridge's great sonnet—“It may indeed be Phantasy.” It contains also some copyright pieces by modern authors—no less than three poems from Fiona Macleod, including the long and stately “Madonna Natura.” These alone give to the booklet a literary value apart. The publishers are Messrs. Hill & Co., London, and the price one shilling.

The Kentia Palms.

THIS class of palms is very interesting, extremely useful and beautiful plants. The photo shows a *Kentia belmoreana* grown in a 13 inch tub and standing fully 10 feet high. It is known in its native country as the curly-leaved palm, where it reaches a height of from 40 to 50 feet. The leaves are pinnate and deep green, the leaflets having a handsome and curled appearance, and the stems are quite destitute of spines. It is a splendid object for the decoration of a greenhouse or conservatory, their noble and majestic foliage producing an

eminently tropical appearance. Nor do they rapidly become too large to be accommodated in a medium-sized house. They may also be employed with considerable advantage for the embellishment of the drawingroom in vases and in addition may be used with splendid effect as dinner table decorators when in a young state. When they so far increase in size as to be no longer suitable for such uses, nothing can be more effective for the decoration of entrance halls, corridors, or staircases; indeed, it is impossible to conceive any place requiring decoration in which this favourite curly palm could not be advantageously introduced. Kentias are amongst the easiest plants to cultivate, their chief requirements being

good drainage and an abundant supply of water to both roots and foliage; in the latter case, however, see that it is clean. The greatest error it is possible to fall into is to keep them dry at any period of the year. Many kind of palms grow on the banks of rivers in their native country; others, although growing at considerable distance from running streams, are only found in humid places. The soil best adapted for their cultivation is a mixture of loam and peat in about equal proportions, adding a little sand to keep it open and sweet. When it is not desirable to put the plants into larger pots, a portion of the surface soil should be removed and replaced with good soil, adding a sprinkling of some good manure, which is sure to be attended by good effect upon the plants. In regard to re-potting

palms it cannot be too strongly impressed upon the operator the necessity of preserving intact the larger fleshy roots which are sure to be found coiled amongst the drainage, for they are the feeders and real life supporters of the plant. Nature does not chop off these roots, and if we imitate nature it should be in her very best form, and not allow our plants to be continually struggling for a bare subsistence.

K. forsteriana is another robust growing variety, and in its native country is known as the Thatch Palm on account of its leaves being used in thatching houses or huts. Its leaves are very deep

green, differing from the curly palm, inasmuch as, whereas in the above they are curled, in this plant they lie quite flat.

K. sapida bears some resemblance to the preceding; it is, however, more slender in all its parts, and produces beautiful bright green leaves, and it should be in every collection of palms. In a young state it is well adapted for the decoration of apartments.

K. Baueri is another variety of great beauty, often known under the name of *Arece Baueri*. It also makes a handsome plant for vases in sitting-rooms, or for the dinner-table when in quite a young state.

The genus *Kentia* contains in all ten species. They are distinguished botanically by having their flowers in groups of three (two being male) along the spadix.

They are found wild from the Moluccas to North Zealand, but are absent from the Australian continent.—J. M. T.



KENTIA BELMOREANA.

SHADE PLANTS.—There is a large number of plants that grow naturally, and therefore best, in the shade. Light exercises a great influence upon the character of leaves, and species that have been long accustomed to shade have adapted themselves to a light of low intensity. A strong light injures them. The leaves of shade plants are, as a rule, thinner and broader and the margins less cut up than the leaves of sun-requiring species. In shade plants, too, there is a greater tendency to form long shoots with more widely spreading branches than is the case with sun plants.



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ROADSIDE FRUIT CULTURE IN GERMANY.

(The Department of Agriculture.

Strong-growing Standard Apple Trees bordering the public highway.

Roadside Fruit Culture in Germany.

THE current number of the Journal of the Department of Agriculture has a most interesting article on the above subject. It says:—The practice of growing fruit beside the public highway, though it has never been seriously taken up in the United Kingdom, is very general in many Continental countries, and nothing, perhaps, strikes the traveller more than the pleasant sight of a public thoroughfare bordered on either side with well-kept fruit trees, laden with their tempting burden and affording a grateful shade to the tired way-farer. There is indeed something particularly attractive in the notion of roadside fruit culture, which seems to present an almost ideal combination of beauty and utility, and it is easy to understand the enthusiasm of the traveller who beholds for the first time the wealth of fruit ripening in these wayside orchards. So far as our climate, at least, is concerned, there is probably no reason why excellent fruit should not be successfully grown along many of our Irish highways, but many other important factors would have to be taken into consideration. These matters are outside the scope of the present article, which merely aims at giving some account of the work that has been done in this direction in the German Empire, where it is estimated that the number of roadside fruit trees is now upwards of two millions.

The article then proceeds to give an historical account

of roadside fruit culture within the German Empire, followed with astonishing figures as to the amounts of money realised by the sale of such fruit. In Hanover, for example, the net profit to the State in one year was £6,837.

APPLICATION TO IRELAND.—We are not a fruit-growing people; we even neglect to utilise the blackberry crop which, out of sheer good will, flourishes in our hedges and is left to rot in tons every autumn. The case would, no doubt, be different if lucious plums and glossy cherries were dangling within our reach, and it might be argued that these would receive a good deal too much attention from the passer-by. No doubt they would; at any rate at first, for here again we have not the fruit-growing tradition to help us. In Wurtemberg or Saxony, where every cottager has his own little fruit garden, there is not much temptation to steal a public plum or a county council apple, and besides, in many places, certain roadside trees are set apart and labelled as for general use. Custom and education have made roadside fruit-culture a possibility in Germany, and custom and education may do the same for us. The appeal to our pockets, at any rate, is a strong one, and the reduction of rates is a matter which no public body can afford to neglect. If such a reduction can be effected by the cultivation of fruit on roadsides and on waste strips of public land, of which there is no lack in Ireland, the subject is one which at least merits careful attention.

Storage of Fruit.

AT the recent Fruit Congress at Hexham a paper on this subject was read by Mr. W. B. Little, an abstract of which (taken from the *Fruit-grower*) is here reproduced:—

Every year we find it necessary that large quantities of fruit should be stored by growers according to the variety of fruit and the condition of the market. In private gardens it also becomes a necessity to store fruit, and the provision of a fruit-room is looked upon as an important factor in this work. The idea of ordinary storage of the majority of soft fruits is not entertained, because such fruits will not keep until the destruction of germ life is complete, and to carry this out we resort to fruit bottling. With many varieties of apples the chemical changes in the substance of the fruit proceeds very rapidly, owing to the high temperature prevailing early in the season. It is very desirable that mid season and later varieties should be stored, otherwise their characteristics would not be fully developed. Even for cooking, it is necessary to store apples such as Newton Wonder and Bramley Seedling. Nature has made many provisions for bringing about the changes which form ripe fruit changes in the chemical constituents which are somewhat difficult to follow. While in a green state the unripe fruits perform a work somewhat similar to that of leaves absorbing carbon dioxide from the atmosphere, and after the breaking up process the oxygen is liberated and the carbon retained to go towards building up the flesh. In apples and pears this is very marked. As ripening begins this process is reversed. Oxygen is absorbed and carbonic acid evolves. If a tree carries a heavy crop of fruit it carries a large number of seeds in the fruit. It has more seed than it can develop, and therefore the healthy life of the tree is practically used up during one season and the energy is lost for the ensuing year. This tells us what to do in regard to thinning. The old method of preserving the freshness of fruit was by immersion in carbonic acid. The fruits should be sound, free from scab and bruises, and be gathered on a dry day. Mr. Little then explained the best method of picking plums, apricots, peaches, nectarines, pears and apples, and went on to say that choice apples or pears can be kept in dry sand in jars. With regard to the ideal fruit room (he proceeded) I can do nothing better than refer you to Messrs. Bunyard, Rivers & Veitch, who have rooms in which fruit can be kept all the year round. These rooms usually have a great quantity of thatch about them, and I believe Mr. River's room is practically under the ground.

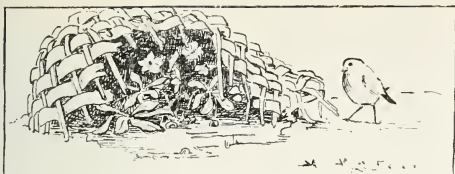
Amateurs can use an outside shed that can be adapted so as to secure a cool, steady atmosphere and circulation of air on the floor. There should also be the necessary facilities for ventilation. The windows and doors should fit very closely. The roof and sides could be thatched with wood, furze, or ling, and the inside could be match-lined; this lining being packed with sawdust to exclude frost. It is good to occasionally damp the floor. Sliding trays can be used for hold-

ing the fruit, and they take up very little room. Bramley's Seedling and some other varieties can be stored in bulk with safety. At Woburn they found Bramley's Seedling stored in a big heap, kept practically as well as those on the shelves. Some people pit their apples and pears in the same way as potatoes, covered with a layer of soil on top of a thickness of straw, and this method has given excellent results. To avoid the communication of a flavour from the straw to the fruit I suggest covering the fruit with brown paper first. In that condition the top fruits may get a rather peculiar flavour, but the majority will not. A drawback, however, is the difficulty of getting the fruit when wanted for use, and I would rather suggest the erection of a hut with walls of half-brick thickness and about 4 feet or 5 feet high, and that the walls be packed round with turves, and a galvanised iron roof, also covered with turves, and then more galvanised iron to run off the water. It is best to have a circulation of air through the fruit room for three or four weeks, and afterwards no air is necessary except what gets in when the door is opened to enter. Thirty-five degrees to forty degrees was the temperature recommended by some men, and it should never be allowed to become dry. Fruit can also be kept a long time in a barrel, sunk half its depth and then covered with soil.

The First "Irish Yew."

IN an account of Lord Enniskillen's Irish estate in the *Estate Magazine* there are some particulars of the famous yew tree at Florence Court Castle, the Earl's seat. This tree is the parent of the countless thousands of Florence Court or Irish Yews that now flourish throughout the world, every one grown from cuttings from this tree or its descendants. According to local authorities upon the subject the tree originated as a sport. Two were originally found growing in a wild state by a Mr. Willis when out coursing for hares in or about the year 1767 on a rock in the mountain above Florence Court. These he dug up, and planted one in his own garden, and took the other in his coat pocket to his landlord, Baron Mountflore (subsequently first Earl of Enniskillen) at Florence Court, where it was planted and still grows. The parent tree at Florence Court is growing in an uncongenial position and in rather damp soil, and for many years suffered considerable damage from cuttings for propagation—cuttings having been sent to all parts of America. Its present dimensions are, height 25 feet, and at 10 feet from the ground the circumference is 66 feet. It consists of two main stems rising close together from the ground, measuring respectively 43in. and 36in. in circumference, and has never looked so well during the past decade or more as it does at present. Needless to say, at Florence Court there are several fine specimens grown from this famous parent; one is 33 feet in height, and at 10 feet from the ground measures 36 feet in circumference.—*Journal of Horticulture*.

It is the wisdom and goodness of gardening which makes it such a deep and enduring happiness. It is the thankfulness, reverence, and love which make our gardens dear to us from childhood to old age.—*Dean Hole*.



The Month's Work.

Flower Garden and Pleasure Grounds.

By E. KNOWLDIN, F.R.H.S.

"Gaunt, grey, and grim, with lagging limb,
December crawls along,
A haggard dame, with skinny frame,
She drones a dismal song;
On, on she goes through falling snows,
With sighs, and sobs, and tears,
Until her falt'ring footsteps reach
The graveyard of the years."

DRAWN BLANK.—As far as the formal flower-garden is concerned we should like to shunt December out of the calendar. That is, where the spring-bedding has been carried out decently and in order, for, to our mind, it now resembles the preparation for some pyrotechnic display, where the coming glories are bottled up in barren-looking framework awaiting the touch of the operator in the form of the caressing hand of spring to transform the whole into life and colour; or like the belle who has given up herself to somnolent curl papers and rests in the chrysalis state ere putting on the whole armour of frills and furbelows for the ball.

CONTINGENCIES.—We may not forget, nevertheless, that the protecting hand is necessary, that nothing goes agree to mar the devoutly wished for consummation of *ove's* labours, for all this buried wealth is at the mercy of marauders in the way of mice, slugs, and birds; and respecting the latter and their love for tulips and crocuses, we quite agree with the poet apostrophising them with "Birds! Birds! Ye are beautiful things, with your earth-treading feet and your cloud-cleaving wings," if—if you'll let our bulbs alone; otherwise "bad cess to yez." We once lost £60 worth of bulbs from a flower garden which our feathered friends found a week after they were planted, and "whipped" the lot.

RATS!—The rat has been getting a pretty bad name of late, and in our experience he richly deserves it all. Even single-handed he is quite able to live up to his worst reputation in the garden. We have had him shell peas in summer, stripping Brussels sprouts in winter, not to mention gnawing the vine-stems through which he had travelled a couple of months before to sample the grapes, whilst no bulbs are safe from his attentions, and—and he is an unmitigated scoundrel to whom we would show no more mercy than in Hamelin City, where, "Go, cried the Mayor, and get long poles; poke out their nests and block up their holes," the up-to-date version of which is run to George's Street and get Watson's Virus.

A QUIETUS.—There is pretty conclusive evidence that having it out with the rascally rat leaves one gardening worry the less, but what we want to come at is now is the time for negotiations—the fight to a finish. Well do we recollect a rat invasion in Kildare, when they trooped in on us from the woods, "Grave old plodders gay young friskers, cocking tails and pricking whiskers," nor how with the assistance of "Mister Hackett" we prepared a Barmecide feast for the rodents whilst a hard frost prevailed, which was availed of to the extent that for twelve months, at least, the rat was as rare as the dodo. As history is repeating itself, and the time is opportune, need we apologise for the digression?

SMALL GAME.—Still, relative to our subject, the season is with us when we are apt to don a very comfortable cloak spun from the yarn of imagination—that the same frost which has our garden in its grip has our despicable enemy, the slug, by the throat, and is very nicely settling accounts without *our* interference. Miss Ormerod, however, in her indefatigable entomological researches, blew the bottom clean out of that belief, and demonstrated by indisputable fact that our old enemy can not only endure being frozen stiff and solid in the soil, but is protected in it from birds, and when he thaws out it is with a smile and an appetite which bodes ill for our pets and is not flattering to our credulity.

OUT OF EVIL.—We may, nevertheless, give a seasonable and reasonable snap of frost the credit for some benevolence, if it is only that of preventing the precocious primrose from rushing into print, and for which "The divine Williams," as a French friend dubbed the Bard of Avon, seemed to have a soft spot in his heart when speaking of "pale primroses which die unmarried." Serve 'em right, we say. We are looking forward to more seasonable things as Christmas approaches in *Chimonanthus fragrans*, which on a warm wall with every blink of sunshine "breathing sweets diffuse." We have already had the first snowdrop in *Galanthus octobrensis*, whose only excuse for coming at all seems merely to be talked about.

WINTER FLOWERS.—Most valuable and generally appreciated, however, are the Christmas roses, especially if one has that good type glorified with the name or *Helleborus niger maximus*. The cool, moist year seems to have suited it, for we see strong tufts in which the stiff-necked buds are looped in close cushions awaiting the call of kindness to give us Christmas roses, all of which, of course, is very easily managed by lifting the clumps, binding the roots up in moss with iron wire and putting them in the greenhouse. And that's the way to kill 'em, some will say. Well, and in spite of the plant's aversion to disturbance, we used to do this without killing by using two batches in alternate years, and for some years without deterioration.

WINTER FOLIAGE.—How cheery now is gold among the green! Surely the golden privet is one of the finest evergreens or ever-yellows which ever came to gladden up our gardens, and it came so quietly, how, when, or from where we don't know, and it increases in favour, whilst its capabilities have room for amplification when planters can be induced to let themselves go and drop their dotting and dribbling. We say garden advisedly—yea! and the flower-garden at that—for we see not a few over-bedded places where the monopolising of a few of

the bigger beds with golden privet as a permanent subject would be a welcome relief in two senses.

FAIRY TALK.—Who could believe so much beauty to be in evidence at mid-winter as we daily see around Dalkey? Certainly not the Editor, whose den is in Baby-lon-on-Thames, to where we sent him a note trying to impress the gaiety of the shrubby veronicas in masses of rosy crimson and other delights about Dalkey, for our tidings were *not* (so far) told in Gath, so we conclude it was set down as a fairy tale, or at least a freak of fancy. How we should like to show him the great flowering stem of *Agave americana* which has shot up twenty feet in a little garden at Sandycove, and now bears a massive candelabra-like head of bloom!

A REMINDER.—In the pleasure grounds the weather provides opportunities for work which may not be expedient in other directions. If "soft" contemplated alterations to walks and avenues can be made, and if hard the wheels of barrow or cart can keep above ground in the performance of such work as may not only be necessary,

GOOD PRUNING AND
PROPER TREATMENT OF
WOUNDS.

but we are thankful for monopolising the duller month of the twelve. It is the season when the cheerfulness of evergreens in both shrubs and trees emphasises their value where they have been judiciously catered for in the planting, and should a heavy snow-fall occur none will grudge a couple of hours smart work with a prop in promptly relieving them of the incubus which may otherwise spell disaster; and as "December crawls along" surely no funeral function was ever attended with less grief than that of the "Haggard Dame, with skinny frame" as she goes to "The graveyard of the years," . . .

"For from her bier the glad new year
Will give us back the spring."

The Fruit Grounds.

By A. BARKER, Carrigoran, Newmarket-on-Fergus,
Co. Clare.

THE planting of all kinds of fruit trees and bushes should be completed as far as possible during this month, autumn and early winter planting being undoubtedly the most satisfactory. No opportunity should be lost when weather and condition of soil allow of proceeding with new plantations, the thinning of young trees where they have become overcrowded, or the lifting and replanting of fruit trees in unsatisfactory condition. I would strongly advise getting all the planting possible finished during the

first three weeks of this month, whenever the ground is in fit condition at all, as after that period there comes several weeks when planting would be better left alone, as the ground is usually very wet and cold, with such a condition of inertness prevailing as to render planting very undesirable. There is also great risk of trees dying outright, or starting away very weakly when new growth commences, if planted through the end of December and January. I do not advocate the mulching of new planted trees so frequently recommended at this season, as I consider that both trees and ground receive more benefit from being exposed to the little sun and dry weather vouchsafed us through the winter than they do by being mulched with either littery or half-decayed manure, but I would mulch freely on the approach of dry weather in spring time (though I would make an exception in districts where severe frosts or periods of dry weather prevail in the winter, and apply in such localities a light mulch after planting). My general remarks on planting written last month are equally applicable to such operations during this month, so it would be superfluous to here repeat them. Nor need I repeat my advice anent pruning, though it may be advisable to here add a few remarks on that very troublesome disease "canker," which I overlooked when writing my November calendar. This disease is much more destructive amongst some varieties of apples than others, varieties with thin, smooth bark being peculiarly subject to it, and in some districts the disease is



EXAMPLE OF CARELESS PRUNING—THE DECAYING
SNAG PREVENTS PROPER HEALING OF WOUND.

specially virulent. King of the Pippins, Cox's Orange Pippin, Ribston Pippin, Stirling Castle, Emperor Alexander, Wellington, &c., are varieties I find suffer severely from canker. In the case of young or very old trees badly attacked it is labour in vain attempting

to cure them, and it would be just as well to grub these up and replace them with new healthy trees, but with trees, large or small, not severely attacked, this pest may, by close attention and perseverance, be eradicated to such an extent that the trees may be considered practically free from injury by the canker fungus. Small branches, if severely attacked, should be cut away completely and burned. In larger branches, or on stems of trees, wherever the corrugated wounds present, take a very sharp knife or chisel and cut the injured part completely away until sound, healthy bark and wood are reached, leaving a very smooth surface; then brush this surface over with Stockholm tar, as a protection from future attacks. It is also very advisable to raise the vitality of the tree by lifting or root pruning, if the roots are in any bad soil. Liberal mulchings of good, rich manure, or new loam, &c., will assist in rendering the trees less susceptible to canker attacks. It is useful to always bear in mind that the canker fungus can only gain access to the tree through a wound or damaged part, and, consequently, it is very advisable to pare all damaged parts over, and give a rub of the tar brush to the cleaned surface as a preventative.

According as pruning is completed spraying should be proceeded with on every favourable opportunity. Where "black spot" or apple and pear scab has been very virulent give the trees a thorough drenching with sulphate of copper, as recommended in my November calendar. If the trees are infested with lichens, woolly aphis, &c., a very good combined spray to destroy these pests and check the scab is as follows:—One and a-half pounds of sulphate of copper, half pound of quicklime, two pounds of caustic soda 98 per cent., five pints of best paraffin oil; water, ten gallons. Mix the materials as follows:—First place the sulphate of copper in a canvas bag and suspend it in nine gallons of water in a wooden tub until the sulphate is dissolved; thoroughly slake the quicklime in a little water; then add more water to make milk of lime; strain this into tub and add the paraffin oil, and well stir the whole with a flat piece of wood; afterwards add the caustic soda and give another stirring, and be careful that the mixture does not splash into the face. While using this spray it is advisable to rub the hands over with vasaline or wear tight-fitting rubber gloves, and be careful that the spray does not blow over the face. Pears are never (or very rarely) attacked by woolly aphis, and not so subject to lichens, &c., as apples, so these may be sprayed with the copper sulphate to cure pear scab. There are now many very effective sprays sold by all nurserymen and seedsmen which are less trouble to prepare for use than the spray I have described.

Strawberry beds should now be cleaned over, removing all dead leaves and weeds, or any runners that may be left on the plants, so that they may be ready for a heavy mulching of manure in the early part of the coming year; a dressing of basic slag after the beds are cleaned will prove of considerable advantage; the slag may be applied at the rate of 8 to 10 cwt. per acre. Similar treatment also applies to raspberry plots, after the old canes have been cut away and the new ones secured to their supports.

GENERAL REMARKS.—Hedges should be clipped and cleaned over; if any weak places are showing make them up with new plants of whatever the hedge or fence may be composed of. It is a good plan to throw all hedge clippings, prunings, leaves, weeds, &c., from general cleaning-up into a heap on some vacant ground, and when all is gathered up at end of season (or earlier if the heap is getting too big) set fire to it in two or three places and burn all up; the ashes will make a very fertilising agent on the land. Where shelter is required for plots or orchards the present is a good time to plant such shelter or hedges. Common laurels, beech, or thorn quicks and privet mixed, all make good sheltering hedges. The Myrobalan plum forms a hedge more quickly than any of the above, and the more it is clipped or pruned, the denser it becomes. Beech makes a very dense shelter also by planting a double line, the lines about a yard apart, and the plants according to size. Be sure to look through fruit stores and remove any rotting or damaged fruit, otherwise much fruit might be spoiled.

'The Vegetable Garden.

By WILLIAM TYNDALL, Horticultural Instructor,
Co. Kildare.

THE chief work in the vegetable garden during this month is to continue the work of trenching, digging, and ridging the vacant ground if the weather is dry, yet whether some soils are benefited by autumn digging is one of those points on which gardeners, though differing, may each be right; likewise the benefit of digging manure into sandy soils at this time of year for next season's crops. Where grubs, wireworms, and millepedes are troublesome, the soil should be deeply dug or, better, bastard-trenched and left rough, giving a dressing of gas-lime on the surface, and left for some time before lightly forking in.

DRAINING.—If you are to grow good crops the soil must be efficiently drained so that aëration may follow, otherwise crops will not do well. A badly-drained soil, on account of its coldness, attracts frost, which, especially in spring, proves so destructive to tender crops. To know if the ground requires draining open trial holes two to three feet deep, and cover over with boards, &c. If water collects in these it is evident the soil requires draining. Draining need not be very expensive if there is a fair fall for the drains to empty. To know the number of drains required open first at twenty feet apart, and when completed open holes midway between, and if the water stands in them instead of draining away open other drains midway between those opened first. In opening the drains make them wide at the top and narrow down, so that there is barely room for the tiles at bottom which keeps them from rolling about, and consequently easier fixed. The cross drains should empty into the main drain, which should be at a lower level. When all is finished put a good layer of broken stones, clinkers, &c., over them before replacing the soil.

SEAKALE.—If you would grow good seakale early in the winter you must have strong roots that have had a good rest, so do not be in a hurry to start forcing or

take up more roots than you require for each batch. It is often a matter of convenience where and how the roots are forced, but the temperature must be high enough to force growth, yet not too high or the produce will be thin and weak, and often tough when cooked. After seakale and rhubarb have got a few nights' frost they start into growth at a lower temperature. As a general rule the finest growth is had by adopting the old practice of forcing where the roots are grown. Cover the crowns with seakale pots or inverted boxes without lids and the bottoms loose, so that the growths can be examined without moving much of the heating material, which should be a mixture of stable manure and leaves about three feet deep. Examine regularly to see that no harm results from the material getting too hot. If it does, open holes to let heat escape.

RHUBARB.—After a rest not much heat is required to force rhubarb, especially the early red forms, if put in a house where heat can be given, and the roots kept moist. Under the stage of a warm plant house is a good place if light is excluded and sufficient room given for the stalks to grow. Cover permanently planted roots with bottomless boxes or inverted tubs, lids being necessary. At this time of the year a good

depth and width of manure and leaves for heating is necessary, three to four feet not being too much. Carefully guard against too much heat, as great harm to the rhubarb may result.

GLOBE ARTICHOKEs.—These, after the few nights' frost early in this month, look bad in many places, so protect them with dry litter, even putting some over the tops of the plants, so as to have strong shoots next spring.

POTATOES.—If it is intended to force potatoes in pits or pots the sets should now be started by putting them in boxes, and place in gentle heat on a light shelf, and they will then start strong sprouts, all but one of which should be rubbed off before planting. Too much care cannot be given to the storing of seed potatoes, especially early varieties. Now is the time, if not already done, to place the seed in boxes, and these can be stood over each other, but with strips of wood between to admit light and air, and should be kept dry and cool. It is only when growth commences that the boxes should be placed singly, when the more light and air the better, and the sprouts will be strong and purple in colour. Ninetyfold, Duke of York, and British Queen are good early sorts for boxing, and the second and third named are grand quality potatoes.

I heard a music sweet to-day,

A simple olden tune,

And thought of yellow leaves of May

And bursting buds of June,—

Of dew-drops sparkling on the spray

Until the thirst of noon.

A golden primrose in the rain

Out of the green did grow—

Ah! sweet of life in winter's wane,

When airs of April blow!—

Then melted with the changing strain

Into a dream of snow.

—*Thomas MacDonagh.*

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It is commonly remarked by nurserymen in this country that the tendency to plant the more sombre evergreens is hard to combat, and many a plant merchant who takes more than a monetary interest in his business wishes at the planting time that he could only present to his clients eyes some such specimen as a well-flowered Almond, Hybrid Cherry, or Japanese Crab Apple as it appears in the glory of its flowering season, and which anyone can grow. When planting one should never fail to include a fair proportion of deciduous flowering varieties; although most unpromising in appearance when planted, they brighten the entire surroundings in their respective seasons and charm every beholder. One can have bloom almost the year round by planting a judicious selection. Amongst the first to flower is *Amygdalus Davidiana*, a beautiful double white Almond which sometimes blooms as early as January. There are others, such as *Forsythia suspensa*, which flaunt their flowers for weeks in the face of the harsh winds of March, and a host of the best things come in during the succeeding months. Varieties are too numerous to detail here, but planters should send to Messrs. Watson and Sons, Clontarf Nurseries, Dublin, for their catalogue, which contains a collection suitable for most requirements and priced at figures which deter none.

Water Plants and Rock Gardens

THE new quarterly issue of the journal of the Royal Horticultural Society of England contains the text of two papers recently read before the society by Mr. F. W. Moore, M.A., and Mr. R. Lloyd Praeger, B.A. The title of Mr. Moore's paper is "Water Plants," and that of Mr. Praeger's "Rock Gardens, Natural and Artificial," a subject that the author has made his own.

In the course of his paper Mr. Moore remarks:—

There is no more attractive addition to any garden than a quiet pond, with suitably planted margins, and its attractions continue from the opening of the March marigolds at the end of February to the early parts of October. There is a quiet happiness in the appearance of such a pool or pond, on a hot summer day in full sunshine, which is fascinating, and which defies comparison with any other part of the garden. It is only when the same scene is contemplated in winter that one fully recognises how much we owe to water-side vegetation.

Particulars are given as to the formation of a pond and how to stock it with suitable plants. The paper concludes with a list of water plants

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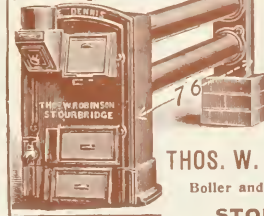


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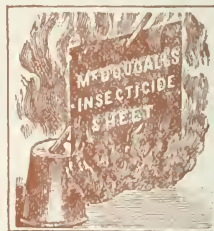
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Evergreens
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Stocks quite
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The most successful Non-poisonous Insecticide
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ITS ADVANTAGES ARE—

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No possible injury to the most delicate Plant, Flower or Foliage.

It is by far the cheapest Insecticide known. One pint makes ten to twelve gallons for Thrip, Black and Green Fly, &c., whilst RED SPIDER, Mealy Bug, and Scale can be thoroughly eradicated by using “NIQUAS,” about double the strength required for Fly.

It is most successfully used by Orange and other Fruit Growers in the Colonies, &c.

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INTRODUCED 1885.

This well-known invention for the entire eradication of all pests infesting vegetation under glass is now manufactured in a more simple and reliable form. The small candle, which will be found packed with each cone, has only to be lighted, and placed on the ground in the centre of the Cone Frame, to produce immediate results. Nothing on the market can equal it for efficacy and cheapness.

Cone No. 3, for a well-secured house of cubic 2,000 to 2,500 feet, price 1/- each. Cone No. 2, for a well-secured house of cubic 1,000 to 1,200 feet, price 8d. each. Cone No. 1, Carbon, for frames cubic 100 feet, price 6d. each. Full directions accompany each Cone.

Ask for a List of Testimonials, of which some hundreds have been received from the leading gardeners in the Kingdom.

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SHADING**

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Sold by all Dealers in Horticultural Sundries throughout the Kingdom, in Packets containing 8 ozs., for 120 feet of glass, 1/-; 24 ozs., 2/6; and in Bags of 7 lbs., 10/6; 14 lbs., 20/-.

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which have withstood prolonged submergence at Glasnevin. Mr. Praeger is also essentially practical in the treatment of his subject, while the biological principles underlying successful culture is carefully explained by the author. As he says:—

When we come to cultivate Alpines and rock plants in our gardens we should remember the conditions under which they grow in their native homes. First of all, even in the case of those which live on wet rocks, drainage is perfect, and that is the *sine qua non* of a successful Alpine garden—drainage and always drainage, and not only main drainage in a way of a general draining of the site should it need it, but drainage for each plant in the form of a light porous soil, with ledges and stony pockets. Then we must imitate the sunny and open positions in which they grow in nature by avoiding over-hanging trees or other too dense shade for our plants. The soil should be deep too, with big blocks of stone, for many of our little Alpines have yard-long roots which they are accustomed to thrust far into the rock crevices in search of food and moisture.

Mr. Praeger, who has devoted much time to the study of rock plants in their native homes, gives a vivid description of the vertical distribution of Alpines, as may be seen in the Alps or in any other similar mountain range, where we find the whole series of floras forming a succession of natural rock gardens as we climb higher and higher from the lower slopes.

Above the limit of cultivation the pine forests climb up the slope, giving shade and a rich, humus soil for many very delightful flowers. Above this sub-Alpine bushes often again afford protection. Hence, we emerge on the great grassy slopes gay with a hundred Alpine species—primulas, gentians, soldanellas, and many others; while around and above are rocky scarps and precipices, the favoured home of innumerable

Alpines—saxifrages, sempervivums, androsaces, and so on.

The paper concluded with a description of the best methods of building rock gardens, a subject that Mr. Praeger has already fully dealt with in the pages of IRISH GARDENING.

Cut Roses for Winter.

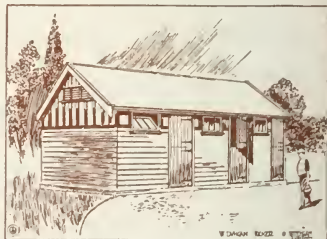
THE best time to cut roses for this purpose is in the end of September and October, when flowers develop more slowly. Any of the larger kinds will answer the purpose. The blossoms should be gathered when in bud, just after the petals are mature and before they have started to unroll. They should be quite dry, and if damp at cutting should be dried. Procure a lid of a tin canister, and around this twist a piece of wire so that the whole thing will be like a small frying pan. Put in it a few lumps of candle wax, then, holding the lid over a lighted candle, take each rosebud and dip the end in the wax, repeating the dipping till a small lump or globe of wax is formed at the end of each stalk; then tie a small piece of silk thread around each of the buds just tight enough to keep in place without injuring the petals. Next get some tin boxes of medium size and on which the lids fit well. Wrap the head of each flower in tissue paper tying it securely at either end with silk. Care should be taken that each bud is thoroughly free from any surface moisture, as one damp bud will spoil a whole box. When roses are wrapped pack them away in the boxes, which should be lined with wadding. The buds may be put in fairly closely as long as they are not really crushed when the lid is put on. In order to make the box doubly air-tight it is well to paste thin strips of paper around the joints of the lid. All the boxes as they are loaded with buds should be placed in a closet or chest in a dry and warm part of the house. The roses may now be left for a period of two or three months. When wanted they are to be taken out one by one carefully as they will be in a very brittle state.

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(FUMIGANT).

	cubic ft.	s.	d.
Half Gallon Tin contains sufficient for	160,000	60	0
No. 1 size Tin—1 pint	"	40,000	15 7
No. 2 size Tin— $\frac{1}{2}$ pint	"	20,000	7 6
No. 3 size Bot.—6 oz.	"	12,000	4 6
No. 4 size Bot.—4 oz.	"	8,000	3 0
No. 5 size Bot.—2 oz.	"	4,000	1 8
No. 5 size Bot.—1 oz.	"	2,000	0 10

FUMIGATORS.

Carriage Paid.

15s. each, for 5,000 cubic feet.
NICOTICIDE PLANT SPRAY.
 (Use 1 part to 40 parts water for Green-fly, &c.)

$\frac{1}{2}$ -pint, 18s. 2d. Pint, 2s.
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 Gallon, 10s. Carriage paid.

GOW'S LAWN SAND DAISY ERADICATOR.

28 lbs., to dress 100 square yards, 7s. 6d.;
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GOW'S SLUG AND WIREWORM DESTROYER,
 Being a Combined Fertilizer.

TOBACCO POWDER; QUASSIA EXTRACT;
AND LAWN SAND

Sold in 6d., 1s., and 2s. 6d. Decorated Tins.

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 1 gal., to make 51 gals., in sol., 3/6. No. 1 Tin, 2/6, to make 25 gals.
 25s. No. 2 Tin, 5/6, " 100 "

"Drum" free. Carriage paid.

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The great Orchard cleanser and re-invigorator.

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Destroys underground pests, including **WIREWORMS**

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Destroys Grass and Weeds on Garden Paths.

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WILLIAM COOPER & NEPHEWS, BERKHAMSTED.

'EUREKA' WEED KILLER.

SAVES WEARY WEEDING.

50 gallons of mixed solution will kill all weeds on 200 square yards of paths, &c.

POWDER.

1/- tin for 12 galls. solution	} Free Tins and Cases.
1/6 " 25 " " "	

LIQUID.

1 gallon - 2 - drum free	} 50s. extra
1 " - 3/6 - " 9d. extra	
2 " - 6/6 - " 2/6	
5 " - 14/- - " 2/6	
10 " - 25/6 - cask 5/-	

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Always Used



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Soles of Best English Sole Leather (Waterproofed) with Motor Tyre Rubber Studs or Solid Rubber. Fig. 1 can be refitted repeatedly, equally to New Boots. Rubber Soles strongly recommended



FIG. 2

Silver Medal—Royal Horticultural Society.

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The Field says: "As good as anything that could be devised."

Mr. TROUP (Head Gardener to H.M. THE KING, Balmoral Castle) writes: "The boots supplied two years ago are as good as ever."

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"CLIMAX" LAWN SAND

When applied during dry weather daisies and other weeds are destroyed and a fine growth of grass quickly covers the places occupied by disfiguring weeds. Thousands of weedy and poor Lawns have been transformed by Climax Lawn Sand. Why not yours? Try it now. 7lbs. 2s., 14lbs. 3s. 6d., 28lbs. 6s., 56lbs. 11s., 112lbs. 20s. Carriage paid. Sample Tin 1s. 3d., post free.



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From Slugs, Grubs, Caterpillars, Ants, Wireworm, and the Domestic Cat—

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A non-poisonous Manure, deadly to every creeping thing, yet does not injure the foliage of plants. Testimonials on application. 7lbs. 2s., 14lbs. 3s. 6d., 28lbs. 6s. Carriage paid. Sample Tin 1s. 3d., post free.



On Garden Paths, Carriage Drives, &c.

By "CLIMAX" WEED KILLER

ONE APPLICATION KEEPS

Down every growth for 12 months. No hoeing or weedy weeding.

PATHS ALWAYS BRIGHT AND CLEAN.

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2 Tins 3s. 6d. Post free.

No. 2 Tin to dress 400 square yds. 6s. 6d.

2 Tins 12s. 6d. Carriage paid.

BOUNDARY CHEMICAL CO., Ltd.
Cranmer St., LIVERPOOL

Unwrap each bud cutting away silk with a scissors, then take a basin of hot—not boiling—water, cut the stem of each bud with scissors just above sealed end, and immerse stalk in basin of hot water for five minutes. Get a large bowl of clean fresh water, put in a small handful of common salt and place all the roses in it as soon as they have been treated with the hot water, care being taken to see that *only the stalks* are in the fluid. Put the whole in a perfectly dark and rather warm cupboard, where the awakening flower should be allowed to stay for several hours. At the end of this time, if the experiment has been carried through on the proper lines, it will be observed that the roses are beginning to take on much of their former loveliness, and in a short time they will develop into much of their original beauty. Of course a proportion are bound to be failures. Still, with moderate success, the worker will feel amply repaid for any trouble taken on account of the value which roses assume in the depths of winter. The treatment may be employed at any time of the year when roses are available for the purpose.

T. ROCHE.

Spring Catalogues.

WILLIAMSON'S SEED POTATOES. SEASON 1910, will be consulted by all planters desirous of obtaining the best and most productive Irish-grown "seed" for next season's crops. It is now a well-established fact that

Irish-grown tubers are the best for seed purposes. All cross-channel experiments prove this year after year. It would be extremely foolish to buy potatoes for seed purposes outside our own country. We strongly recommend readers to send to Summer Hill for a copy of this list and read the results obtained by independent trials throughout the Three Kingdoms.

McGREDY & SON'S CELEBRATED SEEDS.—A very tastefully got up catalogue, issued from this well-known Portadown firm. Sweet peas are specialised. Everything likely to be wanted in a garden is listed and priced. There is no imprint of the printers, but full justice is not given to many of the good half-tone blocks used in the illustration of the book.

RITCHIE'S SEEDS, 1910.—This is a large-paged and well illustrated list of vegetable and flower seeds, issued by a Belfast firm, that has made remarkable progress during the last few years. They claim "unsurpassed" quality and highest germinating power for all seeds sent out. The varieties offered are all well-tried and reputable stuff, a speciality being made of collections suitable for all sizes of gardens. Sweet peas seem to get special attention, and their novelties and exhibition varieties for 1910 are fully described and priced. Many of the illustrations are original and copyright. It is printed in Belfast. It is a catalogue worth getting.

SOIL PESTS—HINTS ON MANURING.—Two booklets issued by the Boundary Chemical Company of Liverpool.

RATS & MICE,

And How to Destroy Them.

See the Testimonials for "Liverpool" Virus. Many Dublin merchants and householders praise it highly. No risk to other animals. Thousands of packages used all over Ireland.

Prices 2s. 6d. and 6s. per tin (postage 3d. and 4d. extra). Special Virus for Mice, 1s. 6d. per tin (postage 2d. extra). All ready prepared; no further mixing required. Fresh supplies can always be had from

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Chemist, &c.

TESTIMONY

Offices—14 D'Olier St. Dublin, Oct. 14, 1909.
Stores—Ringsend, &c.

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(Signed)

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Irish Salt Manufacturers, Coal, Coke, and Corn Merchant

WINTER SPRAYING OF FRUIT TREES

To remove Lichen, &c.

CAUSTIC SODA, 98 per cent. | And all ingredients for Woburn
PEARL ASH, 75/80 " | and other Winter Washes, at
PURE SOFT SOAP " | lowest Cash Prices
SPRAYING & FUMIGATING MATERIALS OF ALL KINDS

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Horticultural Chemist

61 Sth. Great George's St. DUBLIN

Write for Report by J. McLAUCHLAN YOUNG, F.R.C.V.S., F.R.S.E., on the use of "LIVERPOOL" VIRUS for destroying Rats over a large area in Aberteeshire

The first deals with an account of trials made with "Alphol" in the destruction and prevention of such pests as slugs, wireworms, eelworms, and grubs of various kinds, and the second with the manuring of garden plants. The first part gives a very good summary of the general principles of manuring, most useful and readable, while the latter part of the booklets deal particularly with the different kinds of special manures manufactured and sold by the company.

Royal Horticultural Society of Ireland.

A Special meeting of the Council was held at the Society's Office, 5 Molesworth Street, on December 2nd, at which the following members were present—viz., Messrs. Jas. McDonough, J. Wylie-Henderson, W. F. Gunn, D. L. Ramsay, E. D'Olier, Jas. Robertson, F. W. Moore, with Mr. G. M. Ross presiding. Accounts to close the Society's financial year were approved and ordered to be paid. It was arranged that Mr. J. Hume Dudgeon, and Mr. T. F. Crozier should be asked to kindly undertake the auditing of the books and accounts for the year. The date and place of the Annual General Meeting being fixed for December 20th, at 35 Dawson Street, and the Secretary was directed to arrange for the ballot for the election of seven members to the Council. It was also arranged that a sub-committee should meet and deal with suggested alterations to the Rules governing the Society. The following six new members were nominated by Mr. T. F. Crozier—viz., Lady Maurice FitzGerald, Johnstown Castle, Wexford; Mrs. Chatterton, New Park, Blackrock; Mrs. Barton, Stonehouse, Booterstown; Mrs. L. Ireland Good, Carrickbyrur, Foxrock; M. Barrington Jellett, Esq., Clonard, Dundrum; J. Brown, Esq., Mandeville, Foxrock. Five other members elected being, Patrick Moore, Esq., Portmanna, Clonoe, Meath; Major H. A. Henry, Firmount, Sallins; Mr. W. J. Keywood, Castle Bernard Gardens, Bandon, Cork; Mr. A. Barker, Carrigoran Gardens, Newmarket-on-Fergus; and Mr. B. Taylor, Firmount Gardens, Sallins.

At the Annual General Meeting on December 20th, Captain Lewis Riall, D.L., in the unavoidable absence of Lord Ardilaun, the President, took the chair. The minutes of the last Annual General Meeting were read, confirmed, and signed. The 80th Annual Report of the Society, with statement of accounts for 1909, being proposed for adoption by the chairman and seconded by Mr. G. M. Ross, were passed unanimously. In the Report mention is made of arrangements now concluded with the Royal Dublin Society for holding the Spring Show in conjunction with the cattle Show at Ballsbridge. Particulars of membership show that the society stands, all told, at 440 strong, thus showing a considerable increase over the previous year. In parenthesis, it is important that those contemplating joining should send in their names without delay, in order that same can be included in the new list, which will shortly be in the printer's hands for 1910.

In moving the adoption of the amended rules, Mr. Moore lucidly explained the reasons for the alterations, and referring to the new rule, whereby foremen and journeymen gardeners can become associates for an

UNWIN'S SWEET PEAS

HAVE WON A HIGH REPUTATION FOR WELL-SELECTED STOCKS AND RELIABLE NOVELTIES. THE HIGHEST AWARDS WERE GIVEN THEM AT THE NATIONAL SWEET PEA SOCIETY'S TRIALS, AND CUSTOMERS GIVE THEM FIRST AND BEST.

MY NOVELTIES FOR 1910

	SERIES.	Pkt.	s.	d.
Gladys Burt, soft salmon pink, primrose ground, Spencer	10	2	6	
Edna Unwin, intense orange scarlet, slightly waved	8	1	0	
Douglas Unwin, rich self maroon, Spencer	8	1	0	
Doris Burt, large sun-proof scarlet	8	1	0	
Frank Unwin, lavender suffused mauve, Spencer	8	1	0	
Clara Curtis, P.C.C., 1909, N.S.P.S., primrose, Spencer	8	1	0	
Arthur Unwin, primrose suffused rose, Spencer	8	1	0	
Nancy Perkin, Henry Eckford, Spencer	5	2	6	

OTHER FIRST-CLASS VARIETIES

Etta Dyke, grand white, Spencer	30	0	6	
Nora Unwin, a most popular white	25	0	2	
Marjorie Willis, rich glowing rose, Spencer	15	0	6	
John Ingman, rose carmine, Spencer (true)	25	0	3	
Mrs. Hardcastle Sykes, beautiful soft pink, Spencer	20	0	4	
Bobby K., apple blossom blush, Spencer	20	0	4	
Christie Unwin, scarlet shaded cerise	25	0	3	
Countess Spencer, rich pink, Spencer (true)	25	0	3	
Pink Pearl, improved Gladys Unwin	50	0	3	
Helen Lewis, orange salmon, Spencer (true)	20	0	4	
Miss Wilmott, orange salmon	50	0	2	
Primrose Spencer, Burpee's re-selected stock	20	0	6	
Paradise Ivory, primrose flushed pink, Spencer	12	0	6	
Zephyr, silvery blue, Spencer	12	0	6	
Flora Norton, Spencer light blue	20	0	6	
Lord Nelson, deep blue	50	0	2	
King Edward, Spencer own selected	8	0	6	
" " Burpee's selected	15	0	6	
King Edward VII., bright crimson	50	0	2	
Queen Alexandra, sunproof scarlet	50	0	2	
Tennant, Spencer, lovely rose mauve	20	0	6	
A. J. Cook, true violet mauve	25	0	2	
Black Knight, deep maroon	50	0	2	
Asta Ohn, Spencer, lavender suffused mauve	20	0	6	
Frank Dolby, pale lavender	25	0	2	
Jack Unwin, rose flake on white ground	20	0	3	
Aurora, Spencer, orange rose on white ground	15	0	6	
Evelyn Hemus, primrose, terra-cotta edging	20	0	4	
Phenomenal, white edging, violet purple	50	0	2	
Constance Oliver, soft pink, suffused cream, a beautiful variety, Spencer	15	0	6	
Queen of Spain, buff pink	50	0	2	
Gladys French, light blue Helen Pierce	15	0	6	
Helen Pierce, blue and white marbled	50	0	2	
Prince Olaf, blue stripe, white ground	50	0	2	

SPECIAL GOLD MEDAL COLLECTION

The number of seeds in the following packets varies. The quantities are stated after each name.

Helen Lewis (true), orange (20)	Christie Unwin, cerise (30)
John Ingman (true), rose carmine (30)	Bobby K., blush pink (30)
Countess Spencer, (true), pink (40)	A. J. Cook, mauve (40)
Frank Dolby, lavender (40)	Nora Unwin, white (40)
Paradise Red Flake, Red Flake (30)	Flora Norton, Spencer, blue (20)
	King Edward VII., crimson (40)
	Mrs. Collier, primrose (40)

With the exception of the two last varieties all are of the Spencer or Unwin Type.

PRICE: 2s. 6d. the Collection, 12 varieties, or half the above quantities, 12 varieties, 1s. 6d.

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Sweet Pea Specialist,

HISTON, CAMBS.

annual payment of five shillings, thought it could not but increase and extend the society's usefulness and sphere of influence. Being duly seconded by the Rev Canon Hayes, the amended rules were carried *unanimously*. On a ballot being taken the following were elected members of the council:—Messrs. F. W. Moore, T. F. Crozier, H. P. Coodbody, G. M. Ross, Robt. Anderson, C. M. Doyne, and W. F. Gunn; votes of thanks being accorded to the chairman and the auditors, the meeting concluded.

A Chrysanthemum Analysis.

THE Journal of Horticulture for December 23rd gives an interesting chrysanthemum analysis, the result of its annual audit of varieties in the various sections. Owing to the lack of sunshine, chrysanthemums last season failed as a rule to reach full maturity of ripening, and hence, although the blooms were as large as usual, they failed to produce that depth of colour and solidity of substance so desirable in exhibition blooms. The results represent the collective opinion of a large number of English gardeners who were invited to vote upon the comparative merits of the leading varieties in cultivation. In the Japanese section 50 received 12 votes and over; the first five were a tie, with 34 votes each.

Among the decorative varieties the rich, terra-cotta Source d'Or heads the list, followed by Money-maker

(white), Soleil d'Octobre (yellow), Niveus (white), Madame R. Oberthur (white), Lizzie Adcock (golden yellow), Western King (white), and W. H. Lincoln (yellow).

The single-flowered varieties appear to be rapidly advancing in popular favour. The three forms of Edith Pegram (the bronze, the rich pink and white) hold with Mary Richardson (reddish salmon) the premier position, followed by Metta (deep magenta red, white zone), Atrincham (yellow), Poupett Beauty (wine red), and Mrs. E. Roberts (blush), Lady Talbot (soft canary yellow), Mrs. A. T. Millar (white), Reginald Vallis (purple amaranth), Mme. G. Radaelli (rose and white), and Mme. G. Rivol (yellow shaded rose). Closely following these were Bessie Godfrey (canary yellow), Algernon Davis (yellow, bronze and chestnut), F. S. Vallis (canary yellow), and Edith Jameson (creamy-white shaded blush), with 33 votes each, succeeded by J. H. Salisbury (bright terra-cotta, suffused yellow), Mrs. W. Knox (yellow-shaded bronze), and The Hon. Mrs. Lopes (bright yellow).

The Incurred or Chinese Section, being less decorative, is of course not nearly so popular as the Japanese, being mainly grown for exhibition. The following are the names of the first six:—Buttercup (clear yellow), Clara Wells (rich cream), Embleme Poitevine (canary yellow), Mrs. G. Denyer (silvery pink), Lady Isabe (lavender blush), and Pantia Ralli (bronzy buff).

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Contains a higher percentage of pure Nicotine than any other Vaporiser manufactured. Will not injure the most delicate foliage or flowers

Bottles; No. 1, 3/9; No. 2, 7/-; No. 3, 12/6;
1 pint, 15/- each

BENTLEY'S Concentrated Alkali

A quick-acting and most popular non-poisonous Winter Wash for fruit trees and forest trees of every kind. Enormous and rapidly-growing sale

1 to 5 tins, 1/3; 8 tins, 1/2; 12 tins, 1/1;
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REALLY GOOD SWEET PEAS

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SWEET PEA SEED

12 Varieties, 50 Seeds of each					13
26	"	"	"	"	26
44	"	"	"	"	46

List post free on application.

The 12 Newest Varieties, 4/-

SPECIAL NOTICE.—The price of, and number of seeds of each variety in collection No. 4 varies. The number of seeds in each packet is stated in figures after each name. Any variety not priced cannot be sold apart from the collection.

Apple Blossom Spencer (40), rosy pink and blush, waved, 6d.; **America Spencer (15)**, bright rosy scarlet flake, waved; **Black Knight Spencer (25)**, rich dark marone, waved, 6d.; **Constance Oliver (20)**, creamy buff ground, flushed deep pink, waved; **Evelyn Hemus (20)**, waved primrose with pie-tee edge of pink, 6d.; **Marjorie Willis (15)**, a Prince of Wales Spencer; **Miriam Beaver (9)**, a pinkish salmon on buff ground, 6d.; **Mrs. Charles Foster or Asta Ohn (20)**, beautiful waved lavenders, 9d.; **Paradise Ivory (20)**, a pale primrose with slight tinge of pink, waved, 8d.; **St. George (40)**, a grand orange scarlet, 6d.; **Sunproof Crimson (5)**, a large, well waved, rich crimson, a much improved **The King**, and absolutely sunproof, 1-; **The Marquis (15)**, a large waved rosy mauve.

SPECIAL PRICE for the 56 Varieties, 7/6.

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The New Edition, revised to end of 1909, has many important and useful additions; it should be had by all before purchasing their seeds for 1910; it describes over 700 varieties, and gives a useful list of too-much-alike varieties, and will save many from buying the same varieties under many different names, which has been quite a nuisance to the general buyer the last two or three years. This Edition will be bound in stiff covers and charged 6d. each, but the Sixpence may be deducted from the first five shilling order. The best and most useful book published in a compact form. Size, about six inches by four inches.

NOW READY.

The Dublin Wholesale Markets.

IN the past month we have experienced what many people say has been the severest December for the last twelve years. With the roads like glass and the heavy falls of snow many country producers found it impossible to send their produce to market during the Christmas week. With such weather conditions prevailing it is not surprising that home produce was represented in limited quantities. However, there was no lack of supplies, as during December foreign produce arrives in large quantities for the festive season.

Irish apples have been fairly plentiful, but have fallen in point of quality, and it is only occasionally that the large, highly coloured fruit that was a feature of the markets during November is to be seen. Medium-sized apples have been very cheap, and in one instance I observed cases of yellow Ingestre, containing over four dozen well packed fruit, not finding a buyer when offered at twopence per case. Irish pears are much better than last month but not so plentiful. Home grown grapes are not so good as they were last month but have risen in price.

Winter vegetables, such as celery, sprouts, broccoli, and artichokes, are plentiful and cheaper, while cabbage, lettuce, parsley and spinach are increasing in price.

Flowers and greenery of every description arrived in larger quantities during the month for the Christmas season. Mums have been plentiful, and up to the present the quality of the trusses has been very good. Irish violets are arriving in larger quantities. Arum's are scarce and dearer. The great bulk of flowers in the market were from foreign or English sources.

The following are the prices for the month:—

FRUIT		From	To
		s. d.	s. d.
Apples—	Warner's King, per doz.	0 10	1 4
	Cox's Pomona, do.	0 8	1 2
	Lord Derby, do.	1 0	1 4
	Blenheim Orange, do. (mediums)	0 2	0 8
	Winter Queening, per hamper.	4 6	5 0
	Bramley's, per barrel	10 0	16 0
	Alfriston, do.	10 6	15 0
	Mixed Apples, per float	0 4	0 8
Pears—	First Quality, per doz.	1 6	2 6
	Second Quality, do.	0 8	1 6
Grapes—	Alicants, per lb.	0 8	1 2
	Gros Colman, do.	0 10	1 8
	Muscot of Alexandria, do.	1 6	2 0
FLOWERS			
Chrysanthemums,	per doz.	1 6	3 0
Do.,	Second, do.	0 8	1 0
Carnations,	per bunch	1 6	2 6
Violets, Irish,	per doz. bunches	2 0	3 0
Arum Lilies,	per doz.	3 0	4 6
Mistletoe,	per crate	14 0	21 0
Smilax,	per bundle	0 10	1 4
VEGETABLES			
Artichokes,	per float	1 0	1 10
Brussel's Sprouts,	do.	1 0	2 8
Broccoli,	per flasket	2 0	3 8
Beet,	per small bunch	0 1	0 3
Cabbage, Best York,	per load	14 6	24 0
Do., 2nd quality,	do.	8 0	15 0
Do., Savoy,	do.	5 0	14 0

VEGETABLES—continued.		s. d.	s. d.
Celery, White,	per doz.	0 8	1 6
Do., Pink,	do.	0 6	1 2
Carrots,	do	0 3	0 6
Leek,	per bunch	0 2	0 5
Lettuce,	do	0 6	1 6
Mint,	per doz. bunches	1 4	1 10
Parsley,	per float	0 5	0 10
Parsnips,	per doz. bunches	0 9	1 3
Scallions,	per bunch	0 2	0 4
Spinach,	per float	0 10	1 8
Turnips, Garden,	per bundle	0 3	1 0
Do., Swedes,	per cwt.	0 8	1 0
Thyme,	per bunch	0 7	0 11
Sage,	do.	0 6	1 1

ROBERT HUGH CLARKE.

27th December, 1909.

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NOTICE—

TO THE READERS OF
"IRISH GARDENING"

The present number commences the Fifth Volume of "Irish Gardening." A Title-page and Index for Vol. IV. will be issued this month, and will be sent free to any Subscriber applying for same.

Readers of "Irish Gardening" are asked to kindly introduce the paper to any of their friends interested in plants and gardening, and to suggest that the commencement of a new volume is a good time to become a subscriber.

Miscellaneous Section

The Gardeners' Attention

WILL NOW BE OCCUPIED WITH THE

CLEANSING OF FRUIT TREES & PLANTS

THE dormant season is the time to wage war against Mealy Bug, Scale, &c. These pests can speedily be got rid of under glass by the use of "XL-ALL" NICOTINE LIQUID INSECTICIDE. For preparing Fruit Trees and Bushes out of doors for a clean, healthy start next spring, nothing is so effectual as a good spraying, after the leaves have fallen, with RICHARDS' "XL-ALL" WINTER WASH, which will destroy American Blight, other insects, moss, &c., and make the bark clean and healthy. Can be obtained everywhere from the Horticultural Trade.

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Crimson Paradise, intense waved crimson	12 10
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Holdfast Belle, salmon, suffused apricot, waved	8 0 6
Coccinea Paradise, waved Coccinea Purple Paradise, large waved purple	8 10
Prince of Orange, a rich orange, waved	6 10
Mauve Paradise, soft mauve, waved	20 0 4
Paradise Sunrise, improved Sybil Eckford, waved	20 0 6

EXHIBITION COLLECTION. 5-

Showandasee, lavender, waved	15
Evelyn Hemus, yellow picotee, waved	20
Constance Oliver, salmon-pink, waved	20
Olive Ruffell, intense terra-cotta, waved	20

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Elsie Herbert, white picotee, waved	20
Paradise Ivory, yellow ivory, waved	25
Paradise Carmine, rose-carmine, waved	40
Paradise Blue Flake, blue and white, waved	12
Mauve Paradise, large mauve, waved	20
Lucy Hemus, emerald strawberry waved	20
Zera, large white, waved	40
Zebra, mauve flake, waved	12

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To H.M.
The King

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Webbs' Stourbridge Marrow Pea	"	2	6
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MANY people still say "No!" though others who have tried in recent years answer perhaps more wisely, "It depends on where you go."

Probably in no business is the personal element of more concern to the buyer. Plants and trees *grow* and cannot be made by the ton like other goods and sold in packets all of equal quality; oft-times the purchaser cannot even know for a long period if his purchases are true to name. No matter how skilled in gardening, one is, therefore, frequently, if not always, in the hands of the nurseryman when buying, and just in proportion to his integrity and zeal will one be served.

Horticulture in Ireland has been steadily, if slowly, advancing, and though formerly most gardens (perhaps small blame to their owners) were stocked from across the water, things are better now, and one hears some of the best gardeners in Ireland say: "I like to see what I'm getting, and I go to Watson's of Clontarf." It is not a big nursery as they go in England, but it is the largest, best kept, and best equipped in Dublin, and has steadily increased its borders and business of late years. There are still many who may be glad to know they can buy honest nursery goods so near home as Messrs. Watson & Sons' Clontarf Nurseries; and all the firm asks of any such is that they would call and see the grounds for themselves the next time they have any planting to do. The nurseries are but a short run by Clontarf or Howth electric tram from Nelson's Pillar, and there is a service every few minutes, but clients who cannot conveniently call receive personal attention through the post. Probably the *keynote* of the Clontarf firm's measure of success is the personal attention to detail which tends to ensure satisfaction and rarely leaves a client disappointed. [Advt.]

Royal Horticultural Society of Ireland.

THE monthly meeting of the Council was held on the 14th ult. at the society's offices, 5 Molesworth Street, Dublin, members present being Messrs. Reg. T. Harris, LL.D.; Jas. L. McKellar, Geo. Watson, W. J. Mitchison, W. F. Gunn, F. W. Moore, M.A.; Robert Anderson, J. Wylie-Henderson, and Lieut.-Col. Sir John Ross of Bladenburg, with Mr. Ed. D'Olier presiding. Lord Ardilaun, the president, wrote renewing the previous challenge cup for dahlias which was presented by him, and which was won out last year by C. M. Doyne, Esq., D.L., further repeating the cash prizes given by him for hardy flowers, which was gratefully acknowledged. A letter was read from Mr. S. A. Jones, F.R.H.S., Forest Lodge Nurseries, Gowran, Kilkenny, offering prizes for a gladiolus class at the autumn show, and from Messrs. Dobbie & Co., Rothesay,

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GREAT REDUCTION IN PRICES

**McDOUGALL'S CELEBRATED
"FUMERS" AND "SHEETS"**

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Destroys all Disease Germs
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Cleanses and invigorates the soil
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19 Hope Street, GLASGOW

*Forest, Fruit
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Trees & Plants
Evergreens
Roses &c.
Stocks quite
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Catalogues free
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**Gardeners and
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"NIQUAS"

(Registered).

The most successful Non-poisonous Insecticide
of the day.

ITS ADVANTAGES ARE—

Certain death to all Insect Pests.
No possible injury to the most delicate Plant, Flower or Foliage.
It is by far the cheapest Insecticide known. One pint makes ten
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SPIDER, Mealy Bug, and Scale can be thoroughly eradicated by
using "NIQUAS," about double the strength required for Fly.

*It is most successfully used by Orange
and other Fruit Growers in the Colonies, &c.*
PRICES—Pint, 1/-; Quart, 1/9; Half-Gallon, 3/-; Gallon, 5/-
Kegs, each Five Gallons, 22/6; Ten Gallons, 42/6.

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FUMIGATOR . .**

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INTRODUCED 1885.

This well-known invention for the entire eradication of all pests
infesting vegetation under glass is now manufactured in a more
simple and reliable form. The small candle, which will be found
packed with each cone, has only to be lighted, and placed on the
ground in the centre of the Cone Frame, to produce immediate
results. Nothing on the market can equal it for efficacy and
cheapness.

Cone No. 3, for a well-secured house of cubic 2,000 to 2,500 feet,
price 1/- each. Cone No. 2, for a well-secured house of cubic 1,000
to 1,200 feet, price, 8d. each. Cone No. 1, Carbon, for frames
cubic 100 feet, price 6d. each. Full directions accompany each Cone.

Ask for a List of Testimonials, of which some hundreds have been
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Sundries throughout the Kingdom,
in Packets containing 8 ozs., for 100 feet of glass, 1/-; 24 ozs., 2/6;
and in Bags of 7 lbs., 10/6; 14 lbs., 20/-.

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Trade Mark

offering a silver gdl medal (allocated to the summer show)—prizes for one or other of the above shows being presented by F. W. Moore, Esq.; W. H. Odium, Esq.; R. T. Harris, Esq.; T. F. Crozier, Esq.; and Messrs. W. Drummond & Sons, Ltd., to all of whom the best thanks of the council were accorded. A letter was read from the Royal Dublin Society about the holding of the spring flower show at Ballsbridge, and a committee was appointed to make final arrangements. The council passed an unanimous vote of thanks to the Royal Dublin Society for the facilities offered for the holding of the show in conjunction with the spring cattle show. Triennial appointments of honorary officers to the council were as follow—viz., Chairman, H. P. Goodbody, Esq.; vice-chairman, Ed. D'Olier, Esq.; hon. secretary, F. W. Moore, Esq.; the finance committee for the year being Messrs. G. Watson, T. F. Crozier, and G. M. Ross; the schedule committee, Messrs. R. T. Harris, J. L. McKellar, J. Wylie-Henderson, and G. Watson. The summer and autumn show schedules, as compiled by the schedule committee, were discussed, approved, and passed. The summer show, which is fixed for Wednesday, July 6th (place yet to be announced), is especially arranged to cater for the rose, "the very fairest flower that blows," although the president's substantial prizes for hardy flowers will doubtless make a prominent feature. The autumn show which will be held on Thursday, August 25th (place to be announced), will mainly go for the sweet peas, carnations, and dahlias, with a specially introduced class for early apples. Spring, summer, and autumn shows as arranged now offer an especially attractive programme for the year. Eight new members were

elected, viz., The Earl of Grouard, proposed by Mr. T. F. Crozier; Lewis B. Meredith, Esq., Graiguecoma, Bray, proposed by Mr. D'Olier; Mr. P. Flanagan, Moyne Gardens, Dunrow, and Mr. J. McLaren, Ballyfin Gardens, being proposed as practical members by Mr. Jas. Robertson; Dr. M. F. Conyn Kenny, Glendola Lodge, Kilmoy; Rev. R. Bradshaw, Killanme Rectory, Loughrea; Miss Butler, Livistown House, Kilkenny, and Mr. Bedford, Straffon Gardens, the Dundrum Horticultural Society being affiliated.

Clare Horticultural Society.

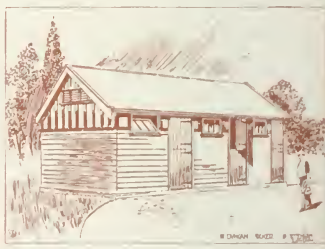
THE above society is early afield with their prize list for a show to be held on August 10, 1910, and it is very noticeable that great strides this society is making from year to year. Last year they risked a spring show, and, emboldened by their success, they now announce another for April 14 and are projecting a fruit show for October. In the schedule under notice, in addition to a very comprehensive range of classes for cottagers, amateurs and professionals, we notice a four-guinea challenge cup for vegetables, from Jones, F.R.H.S., open to the Counties Galway, Clare, Limerick and Tipperary, and three special classes for sweet peas offered by Messrs. Sydenham, Ltd., Henry Eckford of Wem, and Jones, F.R.H.S., Kilkenny, which should afford ample scope for all lovers of this popular flower. Also specials for violas by Mr. W. Bill, Walsall; hardy herbaceous flowers by Messrs. Reamsbottom, and four distinct vegetables by Messrs. Daniels, Bros., Norwich. Copies may be obtained on application to Mr. H. Bill, Lifford, Ennis.

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Conservatories. Ranges
Vineries, Ferneries, Stoves,
Pits, Plant-houses & Green-
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SONS, 7 Upper George's Street, Kingstown

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	cubic ft.	each
Half Gallon Tin contains sufficient for 160,000 ...	60	0
No. 1 size Tin—1 pint ..	40,000	15
No. 2 size Tin—1 pint ..	20,000	7
No. 3 size Bot.—6 oz. ..	12,000	4
No. 4 size Bot.—4 oz. ..	8,000	3
No. 4½ size Bot.—2 oz. ..	4,000	1
No. 5 size Bot.—1 oz. ..	2,000	0
	Carriage Paid.	10

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1s. each, for 5,000 cubic feet.

NICOTICIDE PLANT SPRAY.

(Use 1 part to 40 parts water for Greenfly, &c.).

1/2-pint, 1s. 2d.	Pint, 2s.
Quart, 3s. 6d.	1-gal., 5s.
Gallon, 10s.	Carriage paid.

GOW'S LAWN SAND DAISY ERADICATOR.

28 lbs., to dress 100 square yards, 7s. 6d.;
1 cwt. keg., 21s. Carriage paid.

GOW'S SLUG AND WIREWORM DESTROYER.
Being a Combined Fertilizer.

TOBACCO POWDER; QUASSIA EXTRACT;
AND LAWN SAND

Sold in 6d., 1s., and 2s. 6d. Decorated Tins.

GOW'S

LIQUID WEED KILLER POWDER WEED KILLER

1 gal., to make 51 gals., in sol., 3/6. No. 1 Tin, 2/6, to make 28 gals.
2 " 2s. 10d., 16/6. No. 2 Tin, 6/6, " 100 "

HUNTER & GOW, 46 Thomas St., Liverpool.



V1 FLUID

For Winter Spraying

The great Orchard cleanser and
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APTERITE

The Soil Fumigant

Destroys underground pests, including

WIREWORMS

and Grubs of all kinds, Slugs, Ants,
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WEEDICIDE

A Concentrated Weed-killer

Destroys Grass and Weeds on Garden
Paths.

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'EUREKA' WEED KILLER.

SAVES WEARY WEEDING.

50 gallons of mixed solution will kill all
weeds on 200 square yards of patis, &c.

POWDER.

1 tin for 12 galls. solution	Free Tins
1 " 25 " " "	" "
6- " 100 " " "	" Cases.

LIQUID. 1-50.

1/2 gallon	2-	drum free
1 "	3-6	" 9d. extra
2 "	6-6	" 1/6 "
5 "	14-	" 2/6 "
10 "	25-6	case 3- "



'EUREKATINE'—The successful fumigant.

'EUREKA' Insecticide, Lawn Sand, Heliolebor Powder, Bordeaux
Mixture, Worm Killer, Hayward's Summer Shade, &c.

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The PARAGON PEA TRAINER

(PATENT).

CONSISTS of Light Iron Frames of special
construction, with lines of training wire
stretched between, supported at intervals by
intermediate standards. No trouble, always
ready, and will last for years with only a few
pennies outlay for any necessary renewal of
training wire. Does not harbour insects. Made
4 ft., 5 ft., and 6 ft. high.

COMMENTS FROM USERS:—

"I wish to thank you for your prompt atten-
tion. I shall recommend the Trainers to my
friends and anyone I know who may require
any."—DUBLIN.

"I have from time to time procured addi-
tional quantities of your Pea Trainers, and from
my first experience of them I have found them
to serve all my requirements. The Pea Trainers,
in my opinion, could not be improved; they are
perfect in every way. The peas can be re-
moved from the plants, and the whole of the
crop taken down and removed without difficulty."—DUNDONALD.

"The Trainer worked very well with me, and
kept the peas neat and tidy in."—DUBLIN.

"Your Pea Trainers are both in use. In one
first received the peas are now full grown. They
are great saving of trouble."—DUBLIN.

WRITE FOR PRICE LIST.



Supplied through Seedsmen and
Ironmongers, or direct from—

The Paragon Pea
Trainer Co.,

Bridge St., Banbridge,
Co. Down.



Weeds Killed: Grass Invigorated by

"CLIMAX" LAWN SAND

When applied during dry weather
daisies and other weeds are destroyed
and a fine growth of grass quickly
covers the places occupied by dis-
figuring weeds. Thousands of weary
and poor Lawns have been trans-
formed by Climax Lawn Sand. Why
not yours? Try it now. 7lbs. 2s., 14lbs.
3s. 6d., 28lbs. 6s., 56lbs. 11s., 112lbs.
20s. Carriage paid. Sample Tin
1s. 6d., post free.

PROTECT—
YOUR PLANTS

From Slugs, Crabs,
Caterpillars, Ants,
Wireworm, and the
Domestic Cat—

By ALPHOL

A non-poisonous Manure, deadly to
every creeping thing, yet does not
injure the foliage of plants. Testi-
monials on application. 7lbs. 2s.,
14bs. 3s. 6d., 28lbs. 5s., Carriage paid.
Sample Tin 1s. 3d., post free.

On Garden Paths, Carriage Drives, &c.

By "CLIMAX" WEED KILLER

ONE APPLICATION KEEPS

Down every growth for 12 months. No
hoing or weedy weeding.

PATHS ALWAYS BRIGHT AND CLEAN.

No. 1 Tin to dress 100 square yards, 2s.

2 Tins 3s. 6d. Post free.

No. 2 Tin to dress 400 square yds. 6s. 6d.

2 Tins 12s. 6d. Carriage paid.

BOUNDARY CHEMICAL CO., Ltd.
Cranmer St., LIVERPOOL

The Dublin Wholesale Markets.

THE first month of the new year has found the markets in a very different condition from that witnessed in the closing month of last year. Then we had the busy hum that told of trade being done on a large scale, and if home produce was scanty we had plenty of foreign.

Now the markets have grown dull, and neither home nor foreign produce can be said to be plentiful, with the exception of a few of our more hardy vegetables.

Amongst fruit, Irish apples have not improved, and it is very seldom that choice-named varieties are marketed in small quantities like half bushels, &c. Even the medium classes have grown very scarce. The Bramley's Seedling and Annie Elizabeth in barrels (from Ulster) appeared to be fine fruit, and should have sold better.

Pears and grapes from home sources are very few, and prices are slightly lower (pears especially), probably owing to the superior quality of French sorts being marketed.

Vegetables are arriving in limited quantities, consequently there is a brisk demand. Celery is over plentiful, and except for first-class stuff it would not pay to grow it for the prices realised. Nice lots of seakale and rhubarb are to be seen, but for the latter, though very fine, there is no demand.

Flowers are scarce, and chrysanthemums have apparently for this season ceased to exist as a market flower. Violets are in fair quantities, as are also cross-channel Lilies of the Valley and Tulips.

The following are the prices for the month:—

	FRUIT	From	To
Apples—Bramley's Seedling, per barrel	0 0	14 0	
Annie Elizabeth, do.	0 6	15 0	
1st Quality, per doz.	1 0	2 0	
2nd do. do.	0 8	1 0	
Mixed, per float	1 0	2 0	
Pears—First Quality, per doz.	1 2	2 0	
Second do. do.	0 9	1 6	
Grapes—Alcants, per lb.	0 9	1 2	
Gross Colman, do.	0 10	1 4	
	FLOWERS		
Chrysanthemums, per doz.	1 8	2 6	
Violets, per doz. bunches	0 8	1 2	
Smilax, per bundle	0 8	1 0	
Arum Lilies, per doz.	2 0	2 6	
	VEGETABLES		
Artichokes, per float	1 0	1 6	
Brussels Sprouts, do.	1 0	3 0	
Broccoli, per flasket	1 8	3 0	
Beet, per doz.	0 2	0 3	
Cabbage, Best York, per load	15 0	22 6	
Do. Savoy, do.	8 0	15 2	
Do. Red, per doz.	0 10	1 0	
Celery, do.	0 4	1 8	
Carrots, per doz. bunches	0 9	1 2	
Leek, do.	0 2	0 4	
Lettuce, per doz.	0 8	1 6	
Parsley, per float	0 8	1 0	
Parsnips, per doz. bunches	1 0	1 3	
Spinach, per float	0 8	1 0	
Rhubarb, per doz. bunches	1 0	1 2	
Seakale, per large bunch	0 11	1 1	
Turnips, Garden, per float	0 4	0 7	
Do. Swedes, per cwt.	0 10	0 11	
Mint, per doz. bunches	0 8	1 6	
Sage, do.	1 0	1 6	
Thyme, do.	0 8	1 1	

ROBERT HUGH CLARKE.

RATS & MICE, And How to Destroy Them.

See the Testimonials for "Liverpool" Virus. Many Dublin merchants and householders praise it highly. No risk to other animals. Thousands of packages used all over Ireland.

Prices 2s. 6d. and 6s. per tin (postage 3d. and 4d. extra). Special Virus for Mice, 1s. 6d. per tin (postage 2d. extra). All ready prepared; no further mixing required. Fresh supplies can always be had from

D. M. WATSON,
61 South Great George's Street,
DUBLIN. (Phone 1971)
Chemist, &c.

TESTIMONY

Offices—14 D'Olier St. Dublin, Oct. 14, 1909.
Stores—Kingsend, &c.

Dear Sir,

We have great pleasure in stating that the "Liverpool" Virus has proved very satisfactory in destroying the Rats in our Stores at Kingsend. We highly recommend it to every one.

(Signed)

FLOWER & McDONALD (per pro O. Stafford)
Irish Salt Manufacturers, Coal, Coke, and Corn Merchant

WINTER SPRAYING OF FRUIT TREES

To remove Lichen, &c.

CAUSTIC SODA, 98 per cent. | And all ingredients for Woburn
PEARL ASH, 75/80 " | and other Winter Washes, at
PURE SOFT SOAP | lowest Cash Prices . . .

SPRAYING & FUMIGATING MATERIALS OF ALL KINDS

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Horticultural Chemist

61 Sth. Great George's St. DUBLIN

Write for Report by J. McLAUCHLAN YOUNG, F.R.C.V.S., F.R.S.E., on the use of "LIVERPOOL" VIRUS for destroying Rats over a large area in Aberdeenshire

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THEM

BARCAINS !

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The following are packed free and carriage paid for cash with order for all orders 5s. and upwards.

The following are a few of the most sensational New Roses that have been raised during recent years, and have gained universal favour with all lovers of the queen of flowers.

COLLECTION A

	Each s. d.	Doz. s. d.
Frau Karl Druschki, snow white	0 9	8 0
Madame Ravary, orange yellow	1 0	10 0
Charles J. Crahame, bright crimson ..	0 10	9 0
Dean Hole, carmine shaded salmon ..	1 0	10 0
Richmond, red scarlet	1 0	10 0
Mildred Grant, silvery white, shaded pink	1 0	10 0
Edu Meyer, coppery red and yellow ..	1 0	10 0
Madame Abel Chateau, carmine rose ..	1 0	10 0
Le Progress, golden yellow	1 0	10 0
Liberty, brilliant-velvety-crimson ..	0 10	9 0
Dorothy Perkins, silvery pink (queen of creeping roses)	0 10	9 0
Hiawatha, deep crimson (creeping rose) ..	0 10	9 0

The above 12 splendid plants for 10s.

COLLECTION B

	s. d.	J. B. Clark, scarlet-shaded	s. d.
A. K. Williams, carmine	0 8	each	0 9
Cladya Harkness, salmon	0 8	Tom Wood, cherry red	0 8
Duke of Wellington, velvety red	0 8	Duchess de Morny, bright rose	0 8
Victor Hugo, crimson	0 8	Ben Cant, crimson	0 8
Caroline Testout, salmon	0 9	Mrs. John Laing, soft pink	0 8
		Alfred Colomb, bright red	0 8
		Rev. D. R. Willson, crimson	0 9

The above 12 for 7s. 6d.; 6 for 4s.

COLLECTION C

	s. d.	Running Roses for banks, rockeries, pillars, pergolas, arches, &c. ..	each s. d.
Dorothy Perkins, shell	0 10	Emile Fortepante, white sulphur, yellow centre	0 9
Hiawatha, crimson	0 10	Elisa Robichon, pale yellow	0 9
Blush Rambler, apple blossom	0 9	Evergreen Gem, buff	0 9
Crimson Rambler, crimson	0 9	Edmond Proust, coppery carmine	0 9
Mrs. F. W. Flight, pink	0 10	Ferdinand Roussel, flesh	0 9
Lady Gay, pink	0 10	Mandas Triumph, white	0 9
Thalia, white	0 9	Paul Transon, rose	0 9
Electra, yellow	0 9	René André, soft pink	0 9
Queen Alexandra, rosy pink	0 9	Universal Favourite, pink	0 9
Adelaide Maude, lilac rose	0 9	South Orange Perfection, rosy blush	0 9

Above 20 splendid plants for 13s. 6d.; 12 for 8s.; 6 for 4s. 6d.

COLLECTION D

	s. d.	Climbers for walls, &c. ..	s. d.
Cloire de Dijon	1 0	Sou de la Mal-maison	0 10
Capt. Christy	0 9	W. A. Richardson	0 10
Madame Berard	0 10	Ards Pillar	0 10
Cheshunt Hybrid	0 10	Mde. C. Monnier	0 10
Reve d'Or	1 0	Bardou Job	0 9

The above 12 for 10s.; 6 for 5s. 6d.

COLLECTION E

	s. d.	Roses for pots or bedding ..	s. d.
Augustine Quinoisseau, white tinted flesh	0 9	Madame Pernet Ducher, canary yellow	1 0
La France, satin pink and rose	0 9	Cloire Lyonnaise, pale lemon	0 9
Homere, rose salmon centre	0 9	Cruss an Tepitz, scarlet-crimson	0 9
Madame Jean Dupuy, golden yellow	1 0	Captain Christy, flesh pink	1 0
Lady Quartus Ewart, paper white	1 0	Lady Clanmorris, creamy white	1 0
Madame M. Levasseur, rosy crimson	1 0	Rosette de la Légion d'Honneur, cherry	1 0

The above 12 for 10s.; 6 for 5s. 6d.

COLLECTION F

	s. d.	Good Garden Roses ..	s. d.
Charles Darwin	1 0	Magna Charta	1 0
Duke of Teck	1 0	Comte de Raimbaud	1 0
Dupuy Jamin	1 0	General Jacqueminot	1 0
John Hopper	1 0	Rev. A. Dickson	1 0
		S. M. Rodocanachi	1 0
		Lady Sheffield	1 0

The above 12 for 7s. 6d.; 6 for 4s.

Standards and Half Standards Roses, good heads and straight stems. My selection, 2ls. per doz.; 6 for 10s. Weeping Standards, Lady Gay, Dorothy Perkins and Hiawatha, 44 feet stems with splendid umbrella-shaped heads at 7s. 6d. each, carriage paid if not less than three are ordered. PLEASE NOTE all the above are offered for Cash with order, and cannot fail to give satisfaction—give me a trial.

BATH'S GOLD MEDAL SWEET PEAS

AWARDED, JULY, 1909, GOLD MEDAL NAT. SWEET PEA SOCIETY.

We grow the **Newer Sweet Peas** in very large quantities, and supply Seed to many of the leading houses, both wholesale and retail; consequently we are able to offer the following collections, containing only the best varieties obtainable, at least 25 per cent. lower than many other first-class firms.

COLLECTION W. Price 1s.

Twelve Splendid Varieties (50 Seeds of each).

Black Knight, deep maroon	Nora Unwin, pure white
Countess Spencer, bluish-pink	Sybil Eckford, cream suffused pink
Henry Eckford, shrimp pink	Queen Alexandra, intense scarlet
Jeannie Gordon, rose shaded cream	Queen of Spain, pale reddish lilac
Lady Grisel Hamilton, lavender	True Lavender, pure lavender
Lord Nelson, violet-blue	
Mrs. A. Watkins, pale pink	

Single packets of any of the above varieties. 2d. each.

COLLECTION X. Price 1s. 9d.

Twelve Very Fine Varieties. (The number and price of seeds per packet are indicated after each variety.)

Blushing Bride, blush, overlaid deep pink (50), 3d.	Miss Willmott, bright pink (50), 2d.
A. J. Cook, violet-mauve (50), 3d.	Mrs. Bieberstedt, deep heliotrope (25), 6d.
Enchantress, rich rose (50), 3d.	Helen Pierce, white veined blue (50), 2d.
James Clieve, creamy-yellow (30), 3d.	Mrs. Routzahn, buff and primrose, edged rose (25), 6d.
John Ingman, rosy-pink, shaded carmine (30), 3d.	Pink Pearl, bright rose pink (50), 2d.
King Edward VII., rich carmine scarlet (50), 2d.	Zero, pure white (25), 3d.
Collections W and X together for 2s. 3d., with one packet of Rosabelle Hoare, white striped rose, 3d., gratis.	

COLLECTION Y. Price 2s. 9d.

Twelve Extra Fine Varieties. (The number and price of seeds per packet are indicated after each variety.)

Apple Blossom, rose-mauve, wings reddish lilac (25), 3d.	Mid Blue, clear aniline blue (50), 2d.
Christie Unwin, carmine-lake (20), 3d.	Mrs. Hardcastle Sykes, pale lilac rose (25), 3d.
Clara Curtie, creamy-yellow (25), 6d.	Marjorie Willis, carmine and rose-red (20), 6d.
Frank Dolby, clear lavender (50), 3d.	Nell Gwynne, cream, suffused rose-red (15), 6d.
Helen Lewis, madder-lake (50), 3d.	Purity, pure white (25), 3d.
Lady Althorp, bluish-white, edges deeper (25), 6d.	Tennant Spencer, violet-mauve (20), 3d.

Collections X and Y if purchased together price 3s. 6d., with one packet of Captain of Blues Spencer, bright purple with blue wings, 3d., and Mrs. Masters, white flushed mauve, standards rose, 3d. gratis.

COLLECTION Z. Price 4s.

Twelve Newest Varieties. (The number and price of seeds per packet are indicated after each variety.)

Asta Ohn, light lilac and heliotrope (20), 6d.	King Edward Spencer, carmine and deep red (25), 6d.
Constance Oliver, rose-red on creamy ground (10), 6d.	Marie Corelli, bright rose-pink (10), 6d.
Elsie Herbert, white edged and suffused rose-pink (20), 6d.	Mrs. Walter Wright Spencer, deep mauve (20), 6d.
Evelyn Nemus, cream, edged crushed strawberry (25), 6d.	Othello Spencer, maroon (20), 6d.
Etta Dyke, pure white (20), 3d.	Paradise Ivory, creamy-yellow suffused rose (20), 6d.
Flora Norton Spencer, ageratum-blue (30), 6d.	St. George, cherry-red and rose purple (25), 3d.

The four complete collections for 8s., post paid, and one packet each of Sutton's Queen, cream suffused pale rose, 3d., one packet of Princess Katherine Spencer, white edged blush, 3d., and one packet of Jack Unwin, white striped rose, 3d., and the three above-named Novelties.

BATH'S NOVELTIES FOR 1910.

Azure Fairy, French grey ground, marbled pale blue, a lovely flower, fixed (12), 1s.
Distinction, white ground, distinctly edged rose-red, an improved Elsie Herbert, fixed (10), 1s.
Lilac Queen, clear lilac, colour quite unique, long stems, fixed (30), 6d.
Sweet Lavender, white ground marbled lavender, fixed (10), 6d.

One packet of each of the above four novelties for 2s. 6d. post free.

Complete Illustrated Plant and Seed Catalogues post free on application

R. H. BATH, Ltd., THE FLORAL FARMS, WISBECH.

Catalogues

HARTLAND'S FLOWER AND VEGETABLE SEEDS (Cork).—An Irish firm that has been in existence now for a century (being established in 1810) must surely command the respect and patronage of all gardeners and owners of gardens in Ireland. Mr. William Baylor Hartland's name will always be honourably associated with the history of horticulture, and especially with the development of bulb culture not only in this but in other countries. We are therefore glad to receive another issue of a series of catalogues that reaches back in time to a date just nine years after the "Union." The catalogue opens with a description of the comparatively new potato the "Claddagh," an excellent grower and a remarkably good eating tuber, as we can personally testify. Other varieties of potatoes are listed, following which are the usual lists of vegetable seeds and lists of well selected flower seeds for all ordinary purposes, including sweet peas. The lists of seeds of hardy border perennials will prove useful, especially to amateurs.

WALSLEY'S SEED CATALOGUE AND GUIDE FOR 1910 is a carefully prepared and well-illustrated list of seeds that may be usefully consulted at this time of the year when the cropping of the garden is being arranged for the forthcoming season. It includes lists of recognised good varieties of vegetables and flowers, with brief, cultural directions. On page 13, under lawn seeds, there is given a plan of a double tennis court that may be found helpful for reference.

GARDEN SEED LIST, Wm. Fell & Co. (Hexham), Ltd.—This is a conveniently planned catalogue for easy reference. In addition to lists of selected varieties of vegetables there is an interesting descriptive page devoted to sweet, pot and medicinal herbs, and another to the special varieties of vegetables used in French gardening.

GENERAL SEED CATALOGUE, Wm. Power & Co., Waterford.—We are very pleased to note that our Irish seed houses are beginning to realise the commercial advantage of issuing well printed, suitably illustrated and generally attractive catalogues. The one before us fulfils these requirements, and is well worth preserving on the gardener's shelf. The illustrations are, as far as we can see, stock blocks, but they are very good and carefully reproduced on plate paper. This firm is showing great push and energy, and readers will be well advised to obtain and carefully peruse this latest publication from Waterford.

EDMONDSON'S SPRING CATALOGUE is issued in the form usually adopted by this well-known firm. It contains lists of vegetable and flower seeds, particulars of the Elbana collections of sweetpeas and roses, as well as descriptions of the bee-keeping appliances for which Edmondson's are noted. A word of praise must be given to the illustrations, many of which are the copyright of this firm.

ROBERTSON'S GARDEN SEEDS.—This is a particularly neat and most carefully-turned out list of vegetable and flower seeds and roots, conveniently arranged alphabetically in double columns, and embellished with numerous, small, but effective illustrations. It is of handy size, and will be found convenient for reference.

ROWAN'S GARDEN SEEDS, & Co. is a large-paged catalogue of garden varieties of vegetables and flowers, including sweet peas. This firm makes a speciality of asters, while a tomato they name the "Ideal" seems to have given great satisfaction in Ireland, judging from the testimonials from growers here reproduced.

WATSON & SONS' CATALOGUE, issued from their Clontarf Nurseries, is as usual a very neat publication devoted to descriptive lists of the kind of nursery stock specialised in by this firm. Readers will do well to secure a copy.

Tuberous Begonias

A GREAT SPECIALITY
AWARDED 22 GOLD MEDALS

Seeds saved from our Choice Exhibition Plants

Double, 2s. 6d. and 5s.; **Single and Crested Single**, 1s., 2s. 6d. and 5s. per packet. Also **Friilled Single**, a most beautiful novelty, 1s., 2s. 6d. and 5s. per packet. Also in 6 separate colours, 3s. for 6 packets.

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Doubles, in separate colours, 30s., 21s., 12s. 6d. and 4s. per dozen; in mixed colours, 3s. per dozen. **Splendid for bedding.**

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Cannas, Delphiniums. Border Carnations (a fine sample dozen for 5s.). **Perpetual-Flowering Carnations, Cyclamen, Polyanthus, Pansies and Violets.** 12 Choice Perpetual-Flowering Carnations, in pots, 6s.

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Best and Largest Flowers and Longest Stems

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Containing the 12 best varieties in commerce, price 4s., post free, as follows:—Apple Blossom Spencer, Asta Ohn Spencer, Black Knight Spencer, Capt. of Blues Spencer, Etta Dkye, King Edward Spencer; Marjorie Linzee, Mrs. C. W. Broomfield, Mrs. Routzahn Spencer Paradise Ivory, Tennant Spencer, Zephyr.

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Containing 12 varieties, distinct from above, 2s. 6d., post free, as follows:—Aurora Spencer, Frank Dolby, Helen Lewis, James Grieve, John Ingman, Lord Nelson, Minie Christie, Mrs. H. Sykes, Prince of Asturias, Sutton's Queen, Saint George, White Spencer.

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Containing 20 varieties, including King Edward, Queen Alexandra, Countess Spencer, Cladys Unwin, John Ingman, Nora Unwin, Helen Pierce, &c.

1,000 seeds, 1/-; 2,000, 1/6; 4,000, 2/6, post free.

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VICTORIA STREET BELFAST

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12 Varieties, 50 Seeds of each	13
26 " " " " "	26
44 " " " " "	46

List post free on application.

The 12 Newest Varieties, 4/-

SPECIAL NOTICE.—The price of, and number of seeds of each variety in collection No. 4 varies. The number of seeds in each packet is stated in figures after each name. Any variety not priced cannot be sold apart from the collection.

Apple Blossom Spencer (40), rosy pink and blush, waved, 6d.; **America Spencer (15)**, bright rosy scarlet flake, waved; **Black Knight Spencer (25)**, rich dark marone, waved, 6d.; **Constance Oliver (20)**, creamy buff ground, flushed deep pink, waved; **Evelyn Hemus (20)**, waved primrose with plectee edge of pink, 6d.; **Marjorie Willis (15)**, a Prince of Wales Spencer; **Miriam Beaver (6)**, a pinkish salmon on buff ground, 6d.; **Mrs. Charles Foster or Asta Ohn (20)**, beautiful waved lavenders, 9d.; **Paradise Ivory (20)**, a pale primrose with slight tinge of pink, waved, 8d.; **St. George (40)**, a grand orange scarlet, 6d.; **Sunproof Crimson (6)**, a large, well waved, rich crimson, a much improved **The King**, and absolutely sunproof, 1-; **The Marquis (15)**, a large waved rosy mauve.

SPECIAL PRICE for the 56 Varieties, 7/6.**MR. ROBERT SYDENHAM'S**

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ALL ABOUT SWEET PEAS

quite a nuisance to the general buyer the last two or three years. This Edition will be found in stiff covers and charged 6d. each, but the Sixpence may be deducted from the first five shilling order. The best and most useful book published in a compact form. Size, about six inches by four inches.

NOW READY.

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The New Edition, revised to end of 1909, has many important and useful additions; it should be had by all before purchasing their seeds for 1910; it describes over 700 varieties, and gives a useful list of too-much-alike varieties, and will save many from buying the same varieties under many different names, which has been

IRISH GARDENING.—Calendar of Cultural Operations.—Vegetables.

Name of Vegetable	When to Sow Seed	When to Plant Out	Distance Apart	Ready for Table	Names of Good Varieties
Beet	April and May	Thin when ready	1½ feet lines, 8 in. plants	Aug. to May	Doll's Crimson and Sutton's Blood Red for "Main Crop" and Globe Beet for "early use."
Borecole or Kale	End of April	When ready	2 feet × 1½ feet	Feb. and Mar.	Tall German Borecole and Asparagus Kale
Browccoli	During April	When ready	2 feet × 2 feet	Nov. to June	Self-protecting Winter Mammoth, Superb Early White (Sutton's), Mount Blane (Dorland's), Leanington and Model, in order of cutting
Brussels Sprouts	March	When ready	2 feet × 2½ feet	Nov. to April	Multiple, Wexton, and Exhibition Sprouts
Carrot	During April	Thin when ready	2 feet × 8 in.	Aug. to June	Early Gem, St. Valéry and New Red Intermediate
Cauliflower, Early	On hot-bed, early March	Middle of April	2 feet × 2 feet	July and Aug.	Early Snowball and Dwarf Erfurt
" Main Crop	April	When ready	2 feet × 2½ feet	Aug. to Nov.	Magnum Bonum, Early Giant, and Vetch's Autumn Giant
Cabbage, Spring	Early July	End of September	2 feet × 1½ feet	April and May	Excelsior (Dickson's), Allam's Early Flower Spring and Early Orléans
" Summer	April and May	When ready	2 feet × 1½ feet	June to Dec.	Napier's, Main Crop (Sutton's), Reliance and Mein's No. 1
Celery, Early	Hot-bed, end of Feb.	May	3½ feet by 1 foot	Sept. to Nov.	Early Gem and Clayworth Prize Pink
" Main Crop	" March	June	4 feet × 1 foot	Nov. to April	Solid White and Standardbearer
Leek	End of March	June and early July	1½ feet × 9 inches	Nov. to May	Lyon & Dobbie's International
Lettuce, Summer	March to end of July	Thin when ready	1½ feet × 9 inches	June to Nov.	Pearl, All Year Round, and Continuity
" Winter	Middle August	Oct. and March	1 foot × 9 inches	April and May	Hardy Green, Hammersmith, and Winter Poor
Onions, large Bulbs	Hot-bed, Feb.	End of April	1½ feet × 9 inches	Aug. to May	Alsie Craig and Cranston's Excelsior
" Spring	March	Thin when ready	1 foot × 6 inches	Sept. to May	Bedfordshire Champion and James' Keeping
" Tripoli	End of July and August	Oct. and Feb.	1 foot × 6 inches	May to Sept.	Giant Lemon Recca and Red Flat Italian
" Pickling	End of April	Thin when ready	3 inches each way	Sept.	White Queen and Silver Skin
Parship	February and March	Thin when ready	2 feet × 1 foot	Oct. to May	Student and Tender and True
Potatoes, Early	Feb. & boxed Seed Mar.	Thin when ready	2 feet × 1½ feet	End of June	Ninetyfold and British Queen
" Main crop	March and April	June	2 feet × 2 feet	Aug. to June	Up-to-Date, Duchess Cornwall, Falcot and Langworthy
Savoy	April	June	2 feet × 2 feet	Nov. to Feb.	Drumhead and Model
Beans, Scarlet	First week May	June	Single lines, seed 1 foot apart	Aug. to Nov.	Best of All and No Plus Ultra
" Runners	February to May	June	Double lines, 9 inches apart	July to Sept.	Exhibition Long Pod for early, and Taylor Broad Windsor for late use
" Broad	February to May	June	Double lines, 9 inches apart	July to Oct.	Canadian Wonder and climbing Tender and True
" French	End of April to end of June	June	Double lines, 9 inches apart	June and July	Multiple, Gradus, Beautiful, and William I.
Peas, Early	February	March to May	Sow thinly in shallow drills	July to Sept.	Admiral, Eureka, Senator and Daisy, a dwarf pea
" Mid-Season	March to May	June	Sow thinly in shallow drills	Sept. and Oct.	Gladstone and Autocrat
" Late	May	June	1½ feet × 6 inches	June to Dec.	Early Milan and Snowball
Turnips, Summer	March to June	July and August	1½ feet × 6 inches	Dec. to April	Orange Jelly and Blackstone
" Winter	July and August	March to August	1½ feet × 6 inches	All year round	Victoria Round; quite hardy
Spinach	March to August	April	1½ feet × 1 foot	...	Parsley, Mint, Thyme, and Sage are the most useful

This Calendar has been prepared by Mr. William Tyndall, and it is intended to be torn off and hung up for consultation during the year.

Miscellaneous Section

The Gardeners' Attention

WILL NOW BE OCCUPIED WITH THE

CLEANSING OF FRUIT TREES & PLANTS

THE dormant season is the time to wage war against Mealy Bug, Scale, &c. These pests can speedily be got rid of under glass by the use of "XL-ALL" NICOTINE LIQUID INSECTICIDE. For preparing Fruit Trees and Bushes out of doors for a clean, healthy start next spring, nothing is so effectual as a good spraying, after the leaves have fallen, with RICHARDS' "XL-ALL" WINTER WASH, which will destroy American Blight, other insects, moss, &c., and make the bark clean and healthy. Can be obtained everywhere from the Horticultural Trade.

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TRIM

Agricultural and Horticultural Society

THE Committee of the above Society have fixed date for holding Show for Wednesday, 7th Sept., 1910

PATRICK HEALY, Secretary.

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Is CERTAIN DEATH to Leaf-mining Maggots, Mealy Bug and all Pests infesting plants under glass, &c. Simple to use, no apparatus required. In Boxes to fumigate 1,000 cubic feet, 6d.; to 10,000 cubic feet, 3s. 6d. each. Obtained of Seedsmen and Florists; if unobtainable apply direct—

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Seed of Early Flowering Single Chrysanthemum and Pentstemons should now be sown. Obtain our strain from your seedsman or direct from—

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10 tons	LIGHTON'S Lincolnshire Seed Potatoes.
New	CROP WELL, COOK WELL. Bargain
Sorts	lists—Rock Plants, Begonias, Roses, Pansies
FREE	LIGHTON, KIRTON, BOSTON

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Harmless to Human Beings, Domestic & other Animals, &c.
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Strongly Recommended for the Destruction of Weeds, &c.

Price, 2s. per gallon; 5 gallons, 1s. 6d. per gallon;
10 gallons, 1s. 3d. per gallon; Original 40-gallon casks,
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ILLUSTRATED CATALOGUE FREE.

NOVELTIES FOR 1910.

	seeds	pkt.
Helio Paradise, giant waved mauve	5	10
Zarina, greatly improved Queen of Spain	12	10
Charles Hemus, rich red mahogany self	8	10
Bronze Paradise, a rich maroon self, waved	7	16

Shawondasee, clear blue lavender waved	15	10
Crimson Paradise, immense waved crimson	12	10
Paradise Blue Flake, a charming blue and white variety	12	06
Holdfast Belle, salmon, suffused and waved	8	06
Coccinea Paradise, waved Coccinea	8	10
Purple Paradise, large waved purple	10	10
Prince of Orange, a rich orange, waved	6	10
Mauve Paradise, soft mauve, waved	20	04
Paradise Sunrise, improved Sybil Eckford, waved	20	06

EXHIBITION COLLECTION, 5 -

Shawondasee, lavender	15
Evelyn Hemus, yellow picotee, waved	20
Constance Oliver, salmon-pink, waved	20
Oliver Ruffell, intense terra-cotta, waved	20

National Sweet Pea Society

LONDON EXHIBITION

Royal Horticultural Hall, July 12 and 13

Now is the best time to join the Society. Annual Subscription from 5s. Schedules now ready. SWEET PEAS—ANNUAL, 2s. post free (free to Members).

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Mauve Paradise, large mauve, waved	20
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
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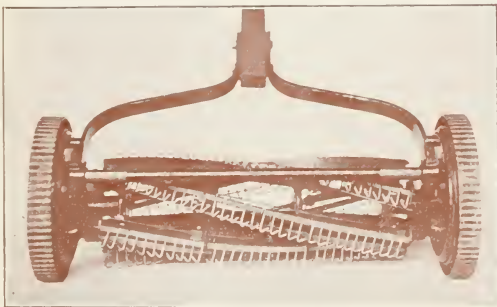
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Real Border Carnations.

THIS month it is necessary to look over one's Carnation beds to replace any layers which have failed during the winter, and to make a note of those varieties which have best stood the wintry weather so that they chiefly may be propagated when the layering season comes round. Unfortunately many of the choice Carnations seen at the principal shows throughout the United Kingdom—correctly described *technically* as "border" varieties—are grown under glass, and comparatively few of these will succeed in the open, when really treated as border Carnations. As a consequence many Carnation lovers are disappointed, and some cease trying to grow the flower they like so much. This is a great pity, for there are numerous sorts of thoroughly hardy constitution.

Others give up the Carnation from non-success which is due to lack of drainage, whereas in fact Carnations can be grown in any garden if the requisite simple preparations be made. Where the soil is stiff or wet abundance of gritty material—coarse sand, mortar rubbish, or the like—should be used and the ground trenched two spades deep, raising the beds and giving them a good slope towards the sun. Only old manure should be used, and this about one-spade deep below the surface.

The premier Irish Carnation Firm have won prizes almost everywhere for their real border Carnations, their stock being grown throughout the year quite unprotected, planted out in their flowering quarters. The blooms staged by Messrs. Watson at horticultural shows are all cut from the open, and a special Carnation booklet with full descriptions of numerous capital doers may be had on application to Messrs. Watson at Clontarf Nurseries, Dublin. Sturdy young plants can also be had now, to bloom this year.

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STOURBRIDGE.

Royal Horticultural Society of Ireland.

THE monthly meeting of the council was held at the society's offices, 5 Molesworth Street, Dublin, on the 11th ult., members present being Messrs. James J. McDonough, J. Wylie Henderson, W. J. Mitchison, W. F. Gunn, T. F. Crozier, D. L. Ramsay, J. P.; F. W. Moore, M.A.; C. M. Doyne, D.L.; Jas. Robertson, J.P.; Ernest Bewley, T.C., with Mr. H. P. Goodbody presiding. Captain Lewis Riall, D.L., and C. M. Doyne, Esq., D.L., were elected vice-presidents of the society, thus bringing the number of vice-presidents up to twelve, a resolution being passed that vice-presidents of the society resident in Ireland should receive the usual summons sent to members of the council for its meetings, unless the wish is expressed for same not to be sent. The sub-committee appointed to consider detailed arrangements with the Royal Dublin Society for the spring show, April 20, 21, in conjunction with the Royal Dublin Society's Spring Show, submitted a report which was considered very satisfactory. The more important items of the arrangements affecting members of the Royal Horticultural Society are, that each member will have personal admission to the two shows each day on signing members' book at entrance; also that the council for this particular show have to suspend the use of members' transferable tickets, the number of which was raised to six at the last annual general meeting, which will be sent to members in due

GREAT CLEARANCE SALE OF ROSES

25 per cent. reduction.

ORDER AT ONCE.

We guarantee the quality to be up to our usual grand standard. Require ground for new stock planting.

SEND FOR SALE LIST AT ONCE, ALSO SEED CATALOGUE

HYBRID PERPETUAL ROSES, all colours, including the New Druschki, pure white, 12 for 5s. 6d., 25 for 10s. 6d., 50 for 20s., 100 for 40s.
HYBRID TEA ROSES, all colours, extra strong, 12 for 8s., 25 for 16s. 50 for 27s. 6d.

All are very hardy, strong, grown in our exposed north country. May also be potted for greenhouse culture. Try a sample order.

CLIMBING ROSES, for arches, pergolas, poles, &c., 12 for 8s., 25 for 15s., 50 for 27s. 6d.

MOSS ROSES, splendid selection, 6s. dozen.

HYBRID SWEET BRIARS, extra strong, 7s. dozen.

CHINA or MONTHLY ROSES, 6s. dozen.

MME. ABEL CHATENAY, finest bedding rose, salmon-pink, tinged yellow, vigorous, 1s. each; 8s. dozen.

FRAU KARL DRUSCHKI, finest white rose in the world, 6s. dozen.

DELPHINIUMS, best new named, enormous spikes and flowers, 9s., 12s., and 15s. per dozen.

30 Phloxes, magnificent plants, all distinct, 12s. Double sweet-scented Paeonies, 10s. and 15s. dozen. 12 Double Pyrethrums, all distinct, 4s. 12 Single Pyrethrums, all named, 4s. The 24 for 7s. 6d.

12 Large Packets Sweet Peas, Named, for 1s.

TERMS—All carriage paid for cash with order. NO BOOKINGS at these prices.

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CROSS'S CLUBICIDE

Destroys all Disease Germs
Extirpates all Insect Life
Cleanses and invigorates the soil
Stimulates Plant Life

**Absolutely indispensable to all
Market Growers & Gardeners**

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Cross's Organic Tomato Guano
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Full particulars on application to the Manufacturers—
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19 Hope Street, GLASGOW

IDEAL VALUE!

BENTLEY'S Nicotine Compound

Contains a higher percentage of pure Nicotine than any other Vaporiser manufactured. Will not injure the most delicate foliage or flowers
Bottles; No. 1, **3/9**; No. 2, **7/-**; No. 3, **12/6**;
1 pint, **15/-** each

BENTLEY'S Concentrated Alkali

A quick-acting and most popular non-poisonous Winter Wash for fruit trees and forest trees of every kind. Enormous and rapidly-growing sales
1 to 5 tins, **1/3**; 8 tins, **1/2**; 12 tins, **1/1**;
20 tins, **11d.** each

CARRIAGE PAID ON 7/6 ORDERS AND UPWARDS

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JOSEPH BENTLEY, Ltd.
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**Gardeners and
Fruit Growers**



"NIQUAS"

(Registered).

The most successful Non-poisonous Insecticide of the day.

ITS ADVANTAGES ARE—

Certain death to all Insect Pests.
No possible injury to the most delicate Plant, Flower or Foliage.
It is by far the cheapest Insecticide known. One pint makes ten to twelve gallons for Thrip, Black and Green Fly, &c., whilst RED SPIDER, Mealy Bug, and Scale can be thoroughly eradicated by using "NIQUAS," about double the strength required for Fly.

It is most successfully used by Orange and other Fruit Growers in the Colonies, &c.
PRICES—Pint, **1/-**; Quart, **1/9**; Half-Gallon, **3/-** Gallon, **5/-**
Kegs, each Five Gallons, **22 6**; Ten Gallons, **42 6**.

LETHORION

Registered Trade Mark.

IMPROVED METAL



No. 92957.

**VAPOUR CONE
FUMIGATOR . .**

At Greatly Reduced Prices.

INTRODUCED 1885.

This well-known invention for the entire eradication of all pests infesting vegetation under glass is now manufactured in a more simple and reliable form. The small candle, which will be found packed with each cone, has only to be lighted, and placed on the ground in the centre of the Cone Frame, to produce immediate results. Nothing on the market can equal it for efficacy and cheapness.

Cone No. 3, for a well-secured house of cubic 2,000 to 2,500 feet, price **1/-** each. Cone No. 2, for a well-secured house of cubic 1,000 to 1,200 feet, price, **8d.** each. Cone No. 1, Carbon, for frames cubic 100 feet, price **6d.** each. Full directions accompany each Cone.

Ask for a List of Testimonials, of which some hundreds have been received from the leading gardeners in the Kingdom.

Registered No. 14629.

FOR

**All Glass Structures
THAT REQUIRE
OUTSIDE SHADING**

The only Genuine, Original, and Improved Article. It has been in general use for **over 30 years**

Be sure to ask for
**SUMMER CLOUD
SHADING**

And see that you get it!

Sold by all Dealers in Horticultural Sundries throughout the Kingdom, in Packets containing 8 ozs., for 100 feet of glass, **1/-**; 24 ozs., **2 6**; and in Bags of 7 lbs., **10 6**; 14 lbs., **20/-**.

MANUFACTURED BY

CORRY & CO., Ltd.

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course, and will be available for the summer and autumn shows. Votes of condolence were passed to Mrs. Donville and family, and to Mr. Hugh Crawford in their recent sad bereavements. The secretary reported that Mr. T. F. Crozier had since the last council meeting presented the prizes in class 3, summer show, and class 16, autumn show for which the council's thanks were accorded. On the proposition of Mrs. Greer, Lady Musgrave, Tourin, Cappoquin, Co. Waterford, was elected a member of the society. The next meeting of the council will be held on the 11th inst., prior to which the secretary will be glad to receive the names of those contemplating membership, particulars of which, with the whole programme for the year, may be had on application, post free. The eightieth annual report, with schedules of the three shows, list of members, and other matters, it may be added, is the most comprehensive yet issued by the society. As an unusually large demand for space is likely to be called for at the spring show trade exhibitors should make application at an early date.



The County Show of the Monaghan Agricultural and Home Industries Association is announced to be held on the 14th and 15th of September.

Rainfall for 1909 at Carrigoran.

Month	Inches		No. of Rainy Days
	Engl.	Irish	
January	3.60	.49	22
February	2.00	.38	11
March	3.90	.48	22
April	6.16	1.08	20
May	1.81	.42	12
June	2.20	.95	11
July	2.51	.97	24
August	1.00	.32	13
September	3.56	1.92	15
October	6.30	.95	24
November	2.34	.54	13
December	4.47	.88	20
Total, 40.03 for year.			207 Rainy days.

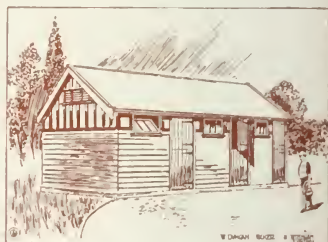
Here we had our average annual rainfall this year—viz., 40 inches (which is the average for this part of Co. Clare), though the amount has been distributed in an unusual manner, April and October being the two wettest months of the year, and about a quarter of an inch more of rain fell in the last half of year than in the first six months.

WM. DUNCAN TUCKER & SONS, Ltd. Telegrams— "Anti-Drip, London"



Conservatories. Ranges
Vineries, Ferneries, Stoves,
Pits, Plant-houses & Green-
houses of all descriptions.
Portable Buildings for every
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Write for Catalogue.
Kindly mention this paper.



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A REVOLUTION IN GARDEN FRAMES !



Send for particulars of our
NEW PATENT

SELF-GLAZING FRAMES

PUTTY NOT REQUIRED

C. BUTLER & CO., Old Fletton Nursery, **PETERBORO'**

NICOTICIDE

(FUMIGANT).

	cubic ft.	s.	d.	each
Half Gallon Tin contains sufficient for	160,000	60	0	0
No. 1 size Tin—1 pint	40,000	15	0	6
No. 2 size Tin— $\frac{1}{2}$ pint	20,000	7	6	0
No. 3 size Bot.—6 oz.	12,000	4	3	0
No. 4 size Bot.—4 oz.	8,000	3	0	8
No. 4 $\frac{1}{2}$ size Bot.—2 oz.	4,000	1	8	
No. 5 size Bot.—1 oz.	2,000	0	10	

FUMIGATORS.

Carriage Paid.

1s. each, for 5,000 cubic feet.

NICOTICIDE PLANT SPRAY.

(Use 1 part to 40 parts water for Green-fly, &c.).

$\frac{1}{2}$ -pint, 1s. 2d.	Pint, 2s.
Quart, 3s. 6d.	$\frac{1}{2}$ -gal., 5s.
Gallon, 10s.	Carriage paid.

GOW'S LAWN SAND DAISY ERADICATOR.

28 lbs., to dress 100 square yards, 7s. 6d.;
1 cwt. keg., 21s. Carriage paid.GOW'S SLUG AND WIREWORM DESTROYER,
Being a Combined Fertilizer.TOBACCO POWDER; QUASSIA EXTRACT;
AND LAWN SAND

Sold in 6d., 1s., and 2s. 6d. Decorated Tins.

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LIQUID WEED KILLER POWDER WEED KILLER

1 gal., to make 51 gals., in sol., 2/6.

5 " 25 " " 16/.

Drums free. Carriage paid.

No. 1 Tin, 2/-, to make 25 gals.

No. 2 Tin, 6/6, " 100 "

Tins free. Carriage paid.

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For Winter Spraying

The great Orchard cleanser and
re-invigorator.

APTERITE

The Soil Fumigant

Destroys underground pests, including

WIREWORMS

and Grubs of all kinds, Slugs, Ants,
Millipedes, &c.

WEEDICIDE

A Concentrated Weed-killer

Destroys Grass and Weeds on Garden
Paths.Full particulars and prices from the Sole Mfrs.,
WILLIAM COOPER & NEPHEWS, BERKHAMSTED.

'EUREKA' WEED KILLER.

SAVES WEARY WEEDING.

50 gallons of mixed solution will kill all
weeds on 200 square yards of paths, &c.

POWDER.

$\frac{1}{2}$ -tin for 12 galls. solution	Free Tins
19 " 25 " "	and
6 " 100 " "	Cases.

LIQUID. 1-50.

$\frac{1}{2}$ gallon	- 2/-	- drum free
1 "	- 3/6	" 9d. extra
2 "	- 6/6	" 1/6 "
5 "	- 14/-	" 2/6 "
10 "	- 25/6	- cask 5/- "

'EUREKATINE' The successful fumigant.

'EUREKA' Insecticide, Lawn Sand, Hellebore Powder, Bordeaux
Mixture, Worm Killer, Hayward's Summer Shade, &c.

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Full list with booklet, "Chemistry in Garden and Greenhouse," sent
post free by makers—

TOMLINSON & HAYWARD, Ltd., LINCOLN.

The PARAGON PEA TRAINER

(PATENT).

CONSISTS of light Iron Frames of special
construction, with lines of training wire
intermediate between, supported at intervals by
stretcher standards. No trouble, always
ready, and will last for years with only a few
pence outlay for any necessary renewal of
training wire. Does not harbour insects. Made
4 ft., 5 ft., 6 ft., 6 ft., 6 ft., 6 ft.

COMMENTS FROM USERS:—

"I wish to thank you for your prompt atten-
tion. I shall recommend the Trainers to all my
friends and anyone I know who may require
any."—DUBLIN."I have found time to time procured addi-
tional quantities of your Pea Trainers, and from
my first experience of them I have found them
to serve all my requirements. The Pea Trainers,
in my opinion, could not be improved; they
are perfect in every way. The peas can be re-
moved from the plants and the whole can be
taken down and removed without difficulty."

—DUNDALK.

"The Trainer worked very well with me, and
kept the peas neat and tidy."—DUBLIN."Your Pea Trainers are both in use. In one
first trained the peas are now full grown. They
are great saving of trouble."—DUBLIN.

WRITE FOR PRICE LIST.

Supplied through Seedmen and
Ironmongers, or direct from—The Paragon Pea
Trainer Co.,Bridge St., Ironbridge,
Co. Down.

RELIABLE GARDEN HELPS

ALPHOL

A Manure that destroys Wireworm, Slugs and
Grubs in the Soil, and Caterpillars on Plants,
Fruit Trees, &c. Prices—1/- and 2/- Tins;
14 lb. Bag, 3/-; 28 lbs., 5/-; 56 lbs., 8/-;
1 cwt., 15/-.

DEMON INSECTICIDE

(Non-Poisonous.) Kills all Insects. Prevents
and Cures Mildew. Prices—1 Pint (to make
12 gallons), 1/-; Quart, 2/-; $\frac{1}{2}$ Gallon, 3/-;
Gallon, 4/-.

CLIMAX LAWN SAND

Transforms Weedy Lawns. Kills the Daisies,
Plantains, &c., and improves the Grass.
Prices—Tins, 1/3 and 2/-; 14 lb. Bag, 3/6;
28 lbs., 6/-; 56 lbs., 11/-; 1 cwt., 20/-.

CLIMAX WEED-KILLER

Kills all Weeds on Garden Paths, Walks, &c.,
and keeps the surface clean and bright for
from 12 to 18 months. Prices—No. 1 Tin, 2/-;
2 Tins, 3/6; No. 2 Tin, 6/6; 2 Tins, 12/6.Boundary Chemical Co. Ltd.
27 Cranmer Street, LIVERPOOL

Catalogues.

JONES' SELECTED SEEDS FOR 1910 is a neatly turned-out catalogue issued from the Forest Lodge Nurseries, Gowran. It contains descriptive lists of selected varieties of all the recognised garden vegetables and flowers. Mr. Jones is a good patron of local horticultural societies, and particulars are here given of the valuable challenge cups offered by him for competition at the Emms and Kilkenny Horticultural Shows. As might be expected a speciality is made of sweet peas, and the remarks on these popular flowers made on p. 19, and the new varieties listed and described on p. 20, will be scanned with interest by intending exhibitors. Mr. Jones is well known as a successful cultivator of gladioli, and we take the liberty of reproducing the following excellent instructions on their culture from the catalogue:—"Glads" like a stiffish soil, deep tillage, richness of compost, and sunlight. They abhor stagnancy above all things, so see that they have good drainage. Trench up the land in winter, incorporating some well-rotted manure, and when about to plant in the spring, break up and well mix this in the soil, tilling deeply. Open holes, or trenches, six to eight inches deep, and for each bulb let there be over an inch of coarse sand, or sifted fine cinders for the roots to work into at the start; this is to keep the bulb from any chance of rotting at the beginning of its life. Cover about six inches deep; stake before the stem gets too tall, tying loosely to the stake, not tightly, or the stem may be hindered in its growth. 'Glads' well repay any little extra trouble bestowed on them, but they can be killed with kindness, like other flowers, so do not overdo

them in the way of manure; care should especially be taken that no fresh manure is allowed near the bulb, as if this is done irreparable damage would be done to the bulb. Too much 'feeding' in the way of liquid manure, &c., only draws up a weakly tall spike with correspondingly weak flowers. Water in dry weather, but do not let them be sodden. They will grow in any soil, even pure sand, but they should be the better attended to in such weak land." Mr. Jones calls special attention to certain species in the genus *lilium* as good subjects for pot plants, and offers to give purchasers full directions as to culture. We are pleased to note that this pretty little catalogue is printed by a Wexford firm. The shamrock design in green on a pure glossy white background produces a very pleasing effect for a cover. A copy will be sent post-free on application.

DRUMMOND'S SEED LIST FOR 1910.—This is a large, padded catalogue, printed in bold type, and well illustrated with half-tone blocks, many of which are of great beauty. The book contains particulars of vegetable and flower seeds, grass seeds for lawns, flower roots, nursery stock, and the requisites for the garden. It is a catalogue that shows much care in its preparation, and will be appreciated by all gardeners.

SEED LIST, 1910, DAVID HENRY, CARLOW.—A pleasing catalogue of vegetable and flower seeds, clearly arranged and suitably illustrated. A speciality is made of collections suitable for all sized gardens, and sweet peas of course are included. There is also a section devoted to bulbs and roots for spring planting.

ALEX. DICKSON & SONS' SEED CATALOGUE FOR 1910.—This compact and conveniently arranged catalogue

RATS & MICE,

And How to Destroy Them.

See the Testimonials for "Liverpool" Virus. Many Dublin merchants and householders praise it highly. No risk to other animals. Thousands of packages used all over Ireland.

Prices 2s. 6d. and 6s. per tin (postage 3d. and 4d. extra). Special Virus for Mice, 1s. 6d. per tin (postage 2d. extra). All ready prepared; no further mixing required. Fresh supplies can always be had from

D. M. WATSON, 61 South Great George's Street, DUBLIN. (Phone 1971)
Chemist, &c.

TESTIMONY

Offices—14 D'Olier St. Dublin, Oct. 14, 1909.
Stores—Ringsend, &c.

Dear Sir,

We have great pleasure in stating that the "Liverpool" Virus has proved very satisfactory in destroying the Rats in our Stores at Ringsend. We highly recommend it to every one.
(Signed)

FLOWER & McDONALD (per pro O. Stafford)
Irish Salt Manufacturers, Coal, Coke, and Corn Merchant

WINTER SPRAYING OF FRUIT TREES

To remove Lichen, &c.

CAUSTIC SODA, 98 per cent.	And all ingredients for Woburn and other Winter Washes, at lowest Cash Prices . . .
PEARL ASH, 75/80	
PURE SOFT SOAP	

SPRAYING & FUMIGATING MATERIALS OF ALL KINDS

Telephone 1971

D. M. WATSON
Horticultural Chemist
61 Sth. Great George's St. DUBLIN

Write for Report by J. McLAUCHLAN YOUNG, F.R.C.V.S., F.R.S.E., on the use of "LIVERPOOL" VIRUS for destroying Rats over a large area in Aberdeenshire

**USE ALSO**

The Fumigen Fumigators. They are the simplest, safest, and most efficient of all fumigators. Price, 6d. each, or 5s. 9d. per doz. at all Chemists, Seedsmen.

For Clean Fruit

Dirty fruit trees cannot bear a sound, clean crop. Wash your dormant trees now with SODALIN, and destroy Moss, Lichen, Slime, Woolly Aphis, and hibernating insects. Just mix the SODALIN powder with cold water and apply by sprayer or brush.

Read the following typical letters (recently received) :—

Chattock & Robertson, Market Gardeners and Nurserymen, Solihull, write, Feb 10, 1910 :

The 100-lbs. (Sodalín) we have used has given most excellent results, and we know of no other winter spray to come near it for cleansing trees.

J. H. Clothier, Fruitgrower, Middle Leigh Farm, Street, Somerset, writes, Feb. 1, 1910 :

I used your Sodalín last year and am very well satisfied with the results.

Sodalín

Prices :—

10-lbs drum . 6s. 6d. Carriage paid
5-lb. tin . 4s. 1d. Post paid

2½-tin (about) . 2s. 5d. Post paid
Small tin . 1s. 4d. Post paid

Ask for leaflet No. S 53.

STRAWSONS & CO. (Dept. 16) 79 Queen Victoria St., London, E.C.

NITRATE OF SODA In 4 lb. Tins for Garden Purposes
At 1s. each. By post, 1s. 6d.

Can be had in DUBLIN from . . .

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Messrs. ALEXANDER DICKSON & SONS, Royal Avenue

In BALLYMENA ————— Messrs. SMITH & CO.

In PORTADOWN ————— SAMUEL McGREDY & SON

Seedsman and Manure Dealers can get these Tins in Cases of not less than two dozen, at wholesale rates, on application to—

JOHN SIMPSON, 15 Lr. Sackville St., Dublin

contains lists of all the varieties of vegetable and flower seeds likely to be required in any garden. "Hawthorn" is the distinctive trade name by which this firm's seeds are known throughout the gardening world. A speciality is made in peas, several popular varieties of which having been raised and introduced by Messrs. Dickson. The catalogue is well illustrated, nicely printed, and put up in a handsome wrapper of special design.

GARDENS OF DELIGHT. A supplement to Kelway's Manual of Horticulture.—This is a large page booklet in praise of herbaceous borders and descriptive of the special borders designed by Messrs. Kelway. It is well-written, abundantly illustrated, and sold at sixpence. It is worth the money to anyone interested in hardy flowers and their artistic treatment.

CLOGS. Descriptive particulars of the Wellington Shoe Co. as to clogs for garden workers. There can be no question as to the utility and comfort of wooden-soled boots during the present wet weather, and we can personally testify as to the good value of the garden clogs manufactured by this firm as we have two pairs in use at the present time.

LIFE ON FOURPENCE A DAY is the title of a pamphlet issued by Albert Broadbent the well-known advocate of vegetarianism. It gives a week's menus with "fifty easy recipes for a family of five persons," together with a coloured chart showing what a penny can buy in the way of nutrient vegetable substances.

Tuberous Begonias

A GREAT SPECIALITY
AWARDED 22 GOLD MEDALS

Seeds saved from our Choice Exhibition Plants

Double, 2s. 6d. and 5s.; **Single and Crested Single**, 1s., 2s. 6d. and 5s. per packet. Also **Fripped Single**, a most beautiful novelty, 1s., 2s. 6d. and 5s. per packet. Also in 6 separate colours, 5s. for 6 packets.

Splendid Large Tubers for Pot Culture or Bedding

Doubles, in separate colours, 30s., 21s., 12s. 6d. and 4s. per dozen; in mixed colours, 3s. per dozen. **Splendid for bedding.**

Singles, in separate colours, 21s., 15s., 8s., and 3s. per dozen; in mixed colours, 2s. 6d. per dozen. **Splendid for bedding.**

For Named Varieties see Illustrated List, post free

OTHER SPECIALITIES

Cannas, Delphiniums, Border Carnations (a fine sample dozen for 5s.). **Perpetual-Flowering Carnations, Cyclamen, Polyanthus, Pansies and Violets**, 12 Choice Perpetual-Flowering Carnations, in pots, 6s.

BLACKMORE & LANGDON
Twerton Hill Nursery, BATH

Winter Spraying of Fruit Trees.

THE following paragraphs are taken from "Fruit Trees and their Enemies" by Messrs. Spencer Pickering (Woburn Experimental Farm) and F. V. Theobald, Vice-principal, South Eastern Agricultural College, Wye:—

"Apart from the consideration of the direct action of a Winter wash in destroying various pests which are probably present, moss, lichen, and dead bark must always accumulate, and the freer trees are kept from these the healthier they will be, and the less will be the opportunities afforded for insects to flourish on them."

"From January to March—Spray trees with a caustic paraffin emulsion for cleansing them of dead bark, and destroying moss, lichen, mussel scale, small apple, ermine moth, gooseberry and currant scale, gooseberry spider, currant shoot and fruit moth, pear leaf blister mite, and possibly other insects."

The formula most recommended in this book for Winter Spraying is as follows:—Soft Soap, $\frac{1}{2}$ lb.; Paraffin (Solar Distillate), 5 pints; Caustic Soda, 2 to 2½ lbs.; Water, 9½ gallons. Copper Sulphate and Lime or Iron Sulphate and Lime may be substituted for the Soft Soap. The necessary articles for this and all other Spraying and Fumigating Mixtures can be had, with directions for mixing, from D. M. Watson, M.P.S., Horticultural Chemist, 61 South Great George's Street, Dublin. 'Phone 1971.

RITCHIE'S SWEET PEAS

"GIANT-FLOWERING"

Collected and named by 20 BEST VARIETIES including King Edward, Queen Alexandra, Countess Spencer, Nora Unwin, John Ingram, Gladys Unwin, Helen Pierce, Lady C. Hamilton, and others of equal merit.

BEST VALUE EVER OFFERED!

1,000 seeds, 200 of each variety, 1s. post free.
2,000 seeds, 100 of each variety, 1s. 6d. post free.
4,000 seeds, 200 of each variety, 2s. 6d. post free.

Exhibition Collection, containing 12 Best Spencer Varieties, 4s. post free.

Royal Collection, containing 12 Grand Spencer Varieties, 2s. 6d. post free. All Hand-picked Seeds.

VEGETABLE SEEDS

Our 5s. Collection contains:—12 pints Birk's Selected Peas for succession; 2½ pints Broad Beans; 1 pint French Beans; 2 large packets each of Cabbage, Carrot, Lettuce, Onion, for succession; 1 large packet each of Best Broccoli, Broccoli, Cauliflower, Celery, Leek, Parsnip, Parsley, Radish, Savoy, Turnip and Vegetable Marrow.

All Best Varieties for 5s. Carriage Paid.

FREE.

CATALOGUE and GUIDANCE about RITCHIE'S SEEDS that produces the Best Vegetables and most beautiful Flowers, sent free on application.

A. S. RITCHIE & CO. Seedsmen
(Dept. 1.) **Victoria St. BELFAST**

SPECIAL
OFFER**SWEET PEAS**FOR
1910.

IF YOU WANT

REALLY GOOD SWEET PEAS

AT MODERATE PRICES SEND TO

ROBERT SYDENHAM, LIMITED
55 TENBY STREET, BIRMINGHAM

NO ONE WILL SERVE YOU BETTER

This Firm has the largest Retail Sweet Pea Trade in the Kingdom, and make a feature of telling their clients of varieties that are not properly fixed, realising it is one thing to see a fine exhibit at shows, but quite another thing to get true stocks of the Seeds.

The quality of their SEEDS is well known all over the WORLD as being equal to anything in the Market.

SWEET PEA SEED

12 Varieties, 50 Seeds of each	...	13
26 " " " " "	...	26
44 " " " " "	...	46

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The Dublin Wholesale Markets.

THE past month has found a diminishing supply of produce from home sources, and in many instances a poorer quality. The inclemency of the weather and the fact of Lent being in may have influenced the markets.

Amongst fruit fresh apples have been seen to better advantage than for some time, and should have fetched better prices. In the early part of the month we had a good selection of the different varieties, but now at the close of the month Bramley's Seedling is the chief variety being sold.

Grapes are very poor and badly coloured, and the demand for them is falling.

Spring flowers are now arriving in larger quantities, the bulk of them being tulips, narcissi, violets, and Aurum lilies, and these are, for the most part, from France.

Vegetables are selling a little better, but the manner in which a large percentage of the root crops are marketed precludes them from realising their full value.

At present York cabbage is very scarce, and a lot of it is too immature to sell as cooking "cabbage." Brussels sprouts are plentiful and very good. As a rule sprouts are one of the best crops sent to the Dublin markets for quality as well as the careful way they are graded. People sending produce to market should always keep before their minds the fact that packing, grading, and cleanliness have a great deal to do with the profitable marketing of produce, let it be flowers, fruit, or vegetables; and that neatly packed and carefully graded stuff will always get its full value, while, on the other hand, if carelessly packed or dirty it only gets about half its value.

It is fully time now that Irish growers should do their best to gain a fair share of the profits of market gardening, and not allow it to be entirely monopolised by foreign growers, as we see it drifting on to, day by day.

The following are the prices for the month:—

FRUIT		From s. d.	To s. d.
Apples—Bramley's Seedling,	per brl.	10 0	15 0
Lane's Prince Albert,	do.	11 0	15 6
Blenheim Orange,	per doz.	0 9	1 3
Allington Pippin,	do.	0 9	1 0
Mixed,	do.	0 6	0 8
Grapes,	per lb.	1 0	1 3

FLOWERS			
Violets,	per doz. bunches	0 6	0 9
Aurum Lilies,	per doz.	2 6	5 0
Narcissus,	per large bunch	0 6	1 0
Tulips,	do.	0 3	0 9
Maidenhair Fern	do.	1 6	2 0
Smilax,	per bunch	0 7	0 10

VEGETABLES			
Artichokes,	per float	1 6	1 9
Brussels Sprouts,	do.	1 6	2 6
Broccoli,	per flasket	3 6	5 6
Beet,	per doz.	0 4	0 8
Cabbage, York,	per load	15 0	21 6
do. Savoy,	do.	10 0	15 0
do. Red,	per doz.	0 10	1 0
Celery,	do.	0 8	1 6
Carrots,	per doz. bunches	0 10	1 1
Leeks,	per doz.	0 2	0 6
Lettuce,	do.	1 0	1 6
Parsley,	per float	0 10	1 4
Parsnips,	per doz. bunches	0 8	1 6
Spinach,	per float	0 10	1 1
Rhubarb,	per doz. bunches	0 8	1 0
Seakale,	per bunch	0 9	1 0

VEGETABLES—Continued		From	To
Turpins, Garden,	per float	0 8	1 0
do. Swedes	per cwt.	3 10	1 0
Mint,	per doz. bunches	3 8	4 0
Sage,	do.	3 10	4 0
Thyme,	do.	3 10	4 4
Asparagus,	per bunch	0 10	1 1

ROBERT HUGH CLARKE.

February 23th, 1910

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Agricultural and Horticultural Society

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PATRICK HEALY, Secretary.

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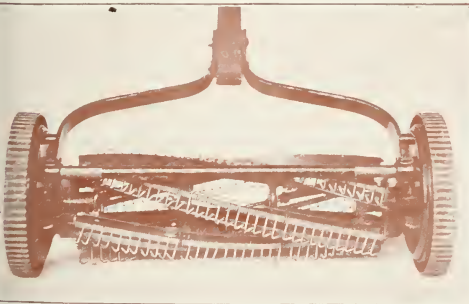
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Webbs' Double Salmon Clarkia	"	0 6
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Webbs' Large-Flowered Sweet Pea	"	0 6

For full particulars, see **WEBBS' SPRING CATALOGUE**, gratis and post free

WEBB & SONS, Wordsley, Stourbridge

Destroying Weeds.

THIS is the month when walks, drives, stable-yards, &c., should be freed from weeds. As soon as the weeds begin to show above the surface they should be attacked, and by taking proper care at that stage the walks and avenues can be kept clean for the whole season. Of the many preparations now on the market there is no doubt that Smith's "Perfect" Weed Killer is the most deservedly popular. All over Ireland and Great Britain it is used in very large quantities both in small gardens and on large estates. For many years it has been used in the Royal Gardens and in many of the public parks and gardens. It can be supplied both in powder and liquid form. Most users, however, find the powder the more convenient, as it saves carriage, and being supplied in free tins there is no trouble sending back empties. Prices will be found on this page. The Irish agent is Mr. D. M. Watson, the well-known horticultural chemist, 61 South Great George's Street, Dublin, and all further particulars may be had from him.

Greenhouse Shading.

THE cheapest, most efficient, and convenient preparation for shading greenhouses and all kinds of

glass roofs is Smith's "Perfect" Summer Shading, which can be had either white or green. It is applied cold—an enormous advantage over preparations which require to be used hot. Smith's Shading does not wash off with the rain, but can be removed when desired by rubbing over with a cloth or brush when wet. It is put in 1s. tins (post, 4d. extra), and can also be had in bulk for large users. The Irish agent is Mr. D. M. Watson, horticultural chemist, 61 South Great George's Street, Dublin, who is also Irish agent for the well-known Smith's "Perfect" Weed Killer, made by the same firm. Smith's Shading has been used for many years on the greenhouses at Kew.

Caterpillars on Gooseberries.

GROWERS of gooseberries should soon spray their bushes with Swift's Arsenate of Lead, which remedy will kill all caterpillars within an hour of application. The caterpillars of gooseberry sawfly feed on the fresh leaves, and are poisoned at once by the arsenate, which sticks to the leaves. Hundreds of tons of Swift's Lead were used in the United Kingdom last year. Irish agent—D. M. Watson, chemist, 61 South Great George's Street, Dublin.

Smith's "Perfect" Patent Powder

WEED KILLER

MARVELLOUS INVENTION

MOST EFFECTIVE

Nothing like it ever seen before. Soluble in Cold Water.

All Tins Free. No Return Empties.

Thousands of
Tins Smith's
"Perfect"
Powder
Weed Killer
used annually
in Ireland

1 Tin, sufficient to make	25 gallons	£0	2	0	Postage 7d. extra
4 Tins	100	0	7	0	
8 Tins	200	0	12	6	Box 3d. extra
12 Tins	300	0	17	0	4d. "
20 Tins	500	1	8	0	6d. "
40 Tins	1,000	2	10	0	1s. "

Carriage Paid on 8 Tins to Stations in Ireland.

THE GARDENS, THEYDON PRIORY. THEYDON, BOIS.

Your Weed Killer last year gave great satisfaction. I tried with Liquid and Powder and was well satisfied with the results of both; but as there are no empties to return with the Powder, it is with me preferable to the Liquid. I shall recommend it to all I can. C. WALSH.



SMITH'S LIQUID WEED KILLER

All sized Packages. One Gallon makes 25 for use. (1 to 50 Strength supplied if required.) 8 Gallons sent Carriage Paid to Stations in Ireland.

NOTICE.—These Preparations are Poisonous.

Sole Proprietors, MARK SMITH, Ltd.

Irish Agent for above—

D. M. WATSON, M.P.S., Horticultural Chemist **61 South Great George's Street**
DUBLIN (Almost opposite Dockrell's)

Telephone 1971

Perennials for Present Planting.

FEW can resist the call of the Spring, and is there any one who does not garden at this season of the year?

Now is an ideal time for planting most kinds of Herbaceous Perennials. Many rich colours are available in the Autumnal Phloxes, and their distinct orange-scarlet and deep salmon shades glow in solid masses of flower in the late Summer and Autumn months. A few specially desirable sorts are *Aurore*, rich salmon, with coppery-red centre; *Cocquelin*, brilliant orange-scarlet; *Drayton*, white; *Fort de France*, rich salmon, purple-eyed; *Francoise de Neufchateau*, metallic copper.

Pyrethrums, both single and double, are safely described as "the earliest free-flowering garden plants for planting," and many of the newer varieties, such as *Yvonne Cayen*, *Lord Rosebery*, *Lady Kildare*, *General French* and *Jubilee*, are well worth having to freshen one's collection, but there are so many good ones that it is desirable to see a reliable descriptive list such as is found in the newly published "Garden Flowers, 1910," to be had from Messrs. Watson & Sons, Clontarf Nurseries, Dublin, free of cost. In this booklet beautiful collections of perennials for garden decoration and cutting are detailed, as well as the most useful alpine and rock plants of easy culture.

Amongst the herbaceous flowers we notice that king of blue perennials, the Dropmore variety of the *Anchusa Italica*, which, as it flowers for an extended period, has no rival amongst blue flowers in the garden.

FOR THE FINEST QUALITY PERPETUAL

Carnation Plants

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Specialists

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BOILERS, PUMPS, LAMP
POSTS, VENTILATING
GEAR.

THOS. W. ROBINSON, LTD.,

Boiler and Pipe Manufacturers,

STOURBRIDGE.

Royal Horticultural Society of Ireland.

At the monthly meeting of the council held at the offices, 5 Molesworth Street, Dublin, on the 17th ult., the following members were present—*viz.*—Messrs. T. F. Crozier, J. Wythe Henderon, R. Anderson, D. L. Ramsay, J. P., E. D. Oher, G. M. Ross, M. A.; Ernest Bowley, T. C.; F. W. Moore, M. A.; Lady Abreda Bourke, C. M. Doyne, D. L. (vice president), and J. L. McKellar, with Mr. H. P. Goodbody presiding. Judges were appointed for the spring show to be held in conjunction with the Royal Dublin Society's spring show at Ballsbridge, April 20th and 21st, and a unanimous vote of thanks was passed to the Council of the Royal Dublin Society for the facilities accorded for it. Replies since received from gentlemen asked to judge enable us to say that the council have been fortunate in securing the services of expert adjudicators in all sections. The two vacancies on the council occasioned by the election of Captain Riell, D. L., and C. M. Doyne, Esq., D. L., as vice-presidents, were filled by the unanimous co-optation of His Honor Judge Bird, Churchtown, Dundrum, and O'Donel Browne, Esq., M. D., Gortmagrena, Naas. Application for space was received from the Tully Nursery, Kildare, for a specimen of Japanese gardening at the spring show representative of the Tully example of Japanese gardening art, which is said to be the finest thing of its kind outside of Japan. This, we venture to predict, will provide both a novel and attractive feature, and the first thing of its kind seen at a Dublin, or, we believe, at any Irish show. Fine specimens of narcissus bicolor Empress were received from Messrs. Chas. Ramsay & Sons, the Royal Nurseries, Ballsbridge, and Capt. Riell had brought in the previous day a well-flowered spray of mimosa (*Acacia dealubata*) from his fine young tree planted out quite in the open at Old Coma Hill, Bray, and yet, as one remarked, we grow at our winters. Specimens of *Canonia capensis* and *Nuttallia verasiformis* from a greenhouse and garden, respectively, were shown. The former is a pleasing South African shrub, introduced in 1816 with a dense white inflorescence six inches in length, and serrated foliage; the *Nuttallia* (California, 1848) a curious, inconspicuously, white-flowered, deciduous subject possessing no claim on our attention beyond a certain quaintness. A dozen varieties of Lenten roses shown emphasised the value of these hybrid hellebores at the season. Five new members were elected—*viz.*, Vis-

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MEDSTEAD, HANTS

Who has an excellent Selection in all three
Sections to offer—

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Destroys all Disease Germs
Extirpates all Insect Life
Cleanses and invigorates the soil
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**Absolutely indispensable to all
Market Growers & Gardeners**

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Cross's Nicotine Vaporiser . . .

To be had from all Seedsmen

Full particulars on application to the Manufacturers—

Alex. Cross & Sons, Ltd.
19 Hope Street, GLASGOW

Tuberous Begonias

A GREAT SPECIALITY
AWARDED 22 GOLD MEDALS

Seeds saved from our Choice Exhibition Plants

Double, 2s. 6d. and 5s.; **Single and Crested Single**, 1s., 2s. 6d. and 5s. per packet. Also **Fripped Single**, a most beautiful novelty, 1s., 2s. 6d. and 5s. per packet. Also in 6 separate colours, 5s. for 6 packets.

Splendid Large Tubers for Pot Culture or Bedding

Doubles, in separate colours, 30s., 21s., 12s. 6d. and 4s. per dozen; in mixed colours, 3s. per dozen. Splendid for bedding.

Singles, in separate colours, 21s., 15s., 8s., and 3s. per dozen; in mixed colours, 2s. 6d. per dozen. Splendid for bedding.

For Named Varieties see Illustrated List, post free

OTHER SPECIALITIES—

Cannas, Delphiniums. Border Carnations (a fine sample dozen for 5s.), Perpetual-Flowering Carnations, Cyclamen, Polyanthus, Pansies and Violets, 12 Choice Perpetual-Flowering Carnations, in pots, 6s.

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“NIQUAS”

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The most successful Non-poisonous Insecticide of the day.

ITS ADVANTAGES ARE—

Certain death to all Insect Pests.

No possible injury to the most delicate Plant, Flower or Foliage.

It is by far the cheapest Insecticide known. One pint makes ten to twelve gallons for Thrip, Black and Green Fly, &c., whilst RED SPIDER, Mealy Bug, and Scale can be thoroughly eradicated by using “NIQUAS,” about double the strength required for Fly.

It is most successfully used by Orange and other Fruit Growers in the Colonies, &c.

PRICES—Pint, 1/-; Quart, 1/9; Half-Gallon, 3/-; Gallon, 5/-; Kegs, each Five Gallons, 22/6; Ten Gallons, 42/6.

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IMPROVED METAL



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FUMIGATOR . . .**

At Greatly Reduced Prices.

INTRODUCED 1885.

This well-known invention for the entire eradication of all pests infesting vegetation under glass is now manufactured in a more simple and reliable form. The small candle, which will be found packed with each cone, has only to be lighted, and placed on the ground in the centre of the Cone Frame, to produce immediate results. Nothing on the market can equal it for efficacy and cheapness.

Cone No. 3, for a well-secured house of cubic 2,000 to 2,500 feet, price 1/- each. Cone No. 2, for a well-secured house of cubic 1,000 to 1,200 feet, price, 8d. each. Cone No. 1, Carbon, for frames cubic 100 feet, price 6d. each. Full directions accompany each Cone.

Ask for a List of Testimonials, of which some hundreds have been received from the leading gardeners in the Kingdom.

Registered No. 14629.

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The only Genuine, Original, and Improved Article. It has been in general use for **over 30 years**

Be sure to ask for
**SUMMER CLOUD
SHADING**

And see that you get it!

Sold by all Dealers in Horticultural Sundries throughout the Kingdom, in Packets containing 8 ozs., for 100 feet of glass, 1/-; 24 ozs., 2/6; and in Bags of 7 lbs., 10/6; 14 lbs., 20/-.

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Trade Mark

James F. Warrington, Peterborough; Vines, Jersey; Miss A. L. M. Smith, Newton, Hereford; C. S. Daniels & Sons, Weymouth, Norfolk; The Holly Nursery, Kidder and Mr. J. W. Jones, The Gardens, Old Court Hill, Bray. The next meeting of the Council will take place on the 31st inst., when the standing committee will be appointed and final arrangements made for the show.

Answers to Correspondents.

PLANTS FOR A UNHEATED GREENHOUSE.—A correspondent has a small unheated greenhouse and wants to know what flowers of comparatively easy culture she can grow in it. Quite a number of interesting plants may be grown. The following are perhaps among the best: Lilies, especially the Japanese kinds, such as the species *arundinum*, *cragensis*, *longilorum*, and *speciosum*. Before potting start the roots by placing the bulbs in sand or leaf-mould, and keep in a warm, moist place. When potting, only fill the pot three-quarters full of soil, and only just cover the top of the bulb. Afterwards, when the stem elongates and shows a tendency to throw outside roots, fill up with fresh soil. The African Lily (*L. fraxinos umbellatus*) is very handsome. It requires a large pot or even tub. The best soil is one made up of two-thirds loam and one-third old well decayed manure, with a free admixture of sand. *Campanula pyramidalis* will give a fine effect with its profusion of bell-shaped blue flowers. It is raised from seed usually sown in March, to flower during the summer of the following year. Stocks and Wall-flowers, in addition to their beauty, will give a delightful perfume to the air of greenhouse. Carnations. The ordinary border kinds will do well in greenhouses, especially if they are given plenty of light. They will give great pleasure when in flower. Of shrubby plants, two of the best are *Hydrangea hortensis* (its roots to be kept fairly dry during winter) and *Spiraea japonica*, or *S. palmata* (pot in autumn and plant out of doors after flowering in May). Bulbs.—Of bulbous plants suitable for the cool greenhouse there are a great many—crocus, gladiolus, iris (bulbous kinds), narcissus, hyacinths and

tulips. Roses.—Three good climbing varieties are Niphetos, L'Inde, and Maman Cochet.

A FEW USEFUL ANNUALS. A correspondent asks for the names of a few annuals for decoration or for cut flowers. It is difficult to make a selection when there are so many to choose from, but the following, at all events, will not disappoint: (1) *Campanula medium*, so named because the style of the flowers rises beyond the rim of the bell, which in this species is of a rosy or of a bluish tint, effective on a rockery and good for cutting. (2) *Gentian*, the new doubles, but do not be disappointed if you get in any one sowing quite as many singles as doubles, useful as cut flowers. (3) *Linum catharticum* has oddly shaped but beautiful flowers and most interesting fruits. (4) *Phalythron Californicum*, or the trailing poppy of the Western States of America; flowers of a delicate yellow tint, handsome on a rockery. (5) *Sedum spectabile* has fleshy leaves and abundant flowers; these if sown at once in the open will flower in July. The following are not quite so hardy, and must be sown later:—(6) *Dianthus Heddegravi*, "Salmon Queen," will make a most brilliant mass of colour if sown in a large clump. (7) *Gaillardia amblyodon*, distinctive in colour and most useful for table decoration in combination with yellows. (8) *Silphium*, "Princess of Wales," is highly decorative in the border, its brown and crimson flowers, veined with yellow, being simply glorious in the sunshine.

SCHOOL GARDENING.—"Schoolmaster" wants to know how he can obtain a training in this subject. The Department of Agriculture gives a summer course on "Rural Science and School Gardening" specially intended for schoolmasters. If he writes to the secretary full particulars will be sent to him.

TRAINING FOR LADY GARDENERS.—"S. P. D." wishes to know if there is any school of gardening in Ireland where young women may obtain a training in practical horticulture. A very limited number of young women are received at the Botanic Gardens, Glasnevin, but the vacancies are "few and far between." If our correspondent is really keen, and not afraid of work, we can

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Conservatories, Ranges
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houses of all descriptions.
Portable Buildings for every
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Kindly mention this paper



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	cubic ft.	each d.
Half Gallon Tin contains sufficient for 160,000	60	0
No. 1 size Tin—1 pint	40,000	15
No. 2 size Tin— $\frac{1}{2}$ pint	20,000	7
No. 3 size Bot.—6 oz.	12,000	4
No. 4 size Bot.—4 oz.	8,000	3
No. 4½ size Bot.—2 oz.	4,000	1
No. 5 size Bot.—1 oz.	2,000	0
		10

FUMIGATORS.

1s. each, for 5,000 cubic feet.

NICOTICIDE PLANT SPRAY.
(Use 1 part to 40 parts water for Green-
fly, &c.)

$\frac{1}{2}$ pint, 1s. 2d.	Pint, 2s.
Quart, 3s. 6d.	$\frac{1}{2}$ gal., 5s.
Gallon, 10s.	Carriage paid.

GOW'S LAWN SAND

DAISY ERADICATOR.

25 lbs., to dress 100 square yards, 7s. 6d.;

1 cwt. keg., 21s. Carriage paid.

GOW'S SLUG AND WIREWORM DESTROYER.

Being a Combined Fertilizer.

TOBACCO POWDER; QUASSIA EXTRACT;

AND LAWN SAND

Sold in 6d., 1s., and 2s. 6d. Decorated Tins

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LIQUID WEED KILLER

POWDER WEED KILLER

$\frac{1}{2}$ gal., to make 51 gals., in sol., 3/6.	No. 1 Tin, 2/-, to make 15 gals.
5 2s.	No. 2 Tin, 6/6, " 100 "
" 16/-	Tins free. Carriage paid.

HUNTER & GOW, 46 Thomas St., Liverpool.

'EUREKA' WEED KILLER.

SAVES WEARY WEEDING.

50 gallons of mixed solution will kill all
weeds on 200 square yards of paths, &c.

POWDER.

1 tin for 12 galls. solution	Free Tins
19 " 25 "	and
6 " 100 "	Cases.

LIQUID.

$\frac{1}{2}$ gallon	2/-	drum free
1 "	3/6	" "
2 "	6/6	" 1/6 extra
5 "	14/-	" 2/6 "
10 "	25/6	cask 5/- "



'EUREKATINE'. The successful fumigant.

'EUREKA' Insecticide, Lawn Sand, Helibore Powder, Bordeaux
Mixture, Worm Killer, Hayward's Summer Shade, &c.

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The PARAGON PEA TRAINER

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CONSISTS of light iron Frames of special
construction, with lines of training wire
stretched between, supported at intervals by
intermediate Standards. No trouble, always
ready, and will last for years with only a few
pence outlay for any necessary renewal
of training wire. Does not harbour insects. Made
4 ft., 5 ft. and 6 ft. high.

COMMENTS FROM GURERS—

"I wish to thank you for your prompt at-
tention. I shall recommend the Trainers to all my
friends and anyone I know who may require
any."—DURHAM.

"I have from time to time procured addi-
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my first experience of them I have found them
to be perfect in every way. The peas can be re-
moved from the plants, and the whole can be
taken down and removed without difficulty."

—DUNDEAL.

"The Trainer worked very well with me, and
kept the peas neat and tidy."—DURHAM.

"Your Pea Trainers are both in use. In one
first-tried the peas are now full grown. They
are great saving of trouble."—DURHAM.

WRITE FOR PRICE LIST.



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**The Paragon Pea
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As executed in numerous places in Ireland
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STREAMS, CASCADES, BRIDGES, &c., including at
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Illustrated prospectus on application. Client waited
on to advise, by arrangement.

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ALPHOL

A Manure that destroys Wireworm, Slugs and
Grubs in the Soil, and Caterpillars on Plants,
Fruit Trees, &c. Prices 1/- and 2/- Tins;
14 lb. Bag, 3/-; 28 lbs., 5/-; 56 lbs., 8/-;
1 cwt., 15/-.

DEMON INSECTICIDE

(Non-Poisonous.) Kills all Insects. Prevents
and Cures Mildew. Prices—1 Pint (to make
12 gallons), 1/-; Quart, 2/-; $\frac{1}{2}$ Gallon, 3/-;
Gallon, 4/-.

CLIMAX LAWN SAND

Transforms Weedy Lawns. Kills the Daisies,
Plantains, &c., and improves the Grass.
Prices Tins, 1/3 and 2/-; 14 lb. Bag, 3/6;
28 lbs., 6/-; 56 lbs., 11/-; 1 cwt., 20/-.

CLIMAX WEED-KILLER

Kills all Weeds on Garden Paths, Walks, &c.,
and keeps the surface clean and bright for
from 12 to 18 months. Prices—No. 1 Tin, 2/-;
2 Tins, 3/6; No. 2 Tin, 6/6; 2 Tins, 12/6.

Boundary Chemical Co. Ltd.

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give her the address of a lady who is running a garden on commercial lines, and with whom she may communicate with a view of being received as a pupil.

MANNER FOR POT PLANTS.—"More Anatum" seeks information concerning the feeding of pot plants in a small greenhouse. He wishes to make up his own mixture. He might try the following:—Take three parts by weight of superphosphate of lime, two parts of nitrate of potash, and two parts of sulphate of ammonia, and mix thoroughly. A salt-spoonful or so of this mixture may be spread over the surface of the soil in each pot, or half an ounce may be dissolved in a gallon of water, and this weak solution used for watering the plants.

Notes.

HERBERT PARK, DUBLIN.—A premium having been offered for the best design for the laying out of Herbert Park, Dublin, the site of the recent International Exhibition, out of a large number of designs submitted that of Messrs. J. Cheal & Sons, Landscape Gardeners, Crawley and London, has been accepted, and the premium awarded accordingly.

SPRAYING.—Mosses, Dockrell & Sons, Ltd., of Dublin, are introducing to Irish fruit-growers a "new process," arsenate of lead in the form of a paste, and known as the Sherwin-Williams. It is claimed for this particular

form of arsenate that it will make a better emulsion, that it contains no injurious traces of free arsenic, and that it is the strongest and most adhesive preparation on the market.

A NEW TYPE OF LAWN MOWER.—We direct our readers' attention to a new Irish invention that ought to prove useful to gardeners and others. It takes the form of an attachment that may be fitted to any make of machine for the easy and effective cutting of bent and other wiry growths, as well as stout tough stems such as knapweed. The invention is known as Orr's "Lasso" attachment, and is sold by Messrs. Kennan & Sons of Dublin.

The people of East Galway and of the adjoining district of North Tipperary have decided to hold a horticultural show in Portumna this year, and the arrangement of classes, distribution of seeds, and other preliminary work is in full swing. "Well begun is half done," and the Portumna Horticultural Society is very fortunate in having as its honorary secretary the Rev. J. J. Griffin of The Rectory, Lorrha, to whose enterprise and infectious enthusiasm the energy with which the scheme is being worked is so largely due. Promises of support are coming in from all sides. A handsome prize-list is being got out, and everything points to the initial venture proving a great success and developing into an annual fixture, to the lasting benefit of the district.

LISTER'S TUBS

FOR PALMS, SHRUBS, &c.



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Finest
Oak and Teak
by
Skilled British
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Write for particulars to Sole Makers—

R. A. LISTER & Co., Ltd., DURSLEY, Glos.

ALL ABOUT SWEET PEAS.—Mr. Robert Sydenham publishes under this title an attractive little book that ought to be in the possession of all lovers of the sweet pea. First, there are a few chatty pages on general topics, then a useful chapter on "How to Grow Sweet Peas," followed by one on exhibiting. The bulk of the volume, however, is taken up by a descriptive list of every known variety of sweet pea (over 700 in all), lists of too-much-alike varieties, the best varieties, and the classification of varieties. The book runs to over 100 pages, and is neatly bound in linen-covered boards. There is no price mentioned, and although it is in no sense a trade list, we presume that copies may be had on application to the Robert Sydenham Co., Birmingham.

KILKENNY HORTICULTURAL SOCIETY.—The schedule of the sixth annual exhibition of this society—to be held on the 1st of September next—has just been issued. The exhibits will include fruit, flowers, vegetables and honey. There is a good prize list, which includes two silver challenge cups (one for vegetables and the other for sweet peas) offered by Mr. S. A. Jones, of Gowran, the hon. secretary.

HARDY ANNUALS.—Sowings of hardy annuals can be made at once, and occasional sowings should be made till the end of next month to secure a succession of blooms. These can be sown where they are intended

NOTICE

THE Editor of IRISH GARDENING would be grateful to any (Irish) correspondent who would kindly supply him with a record of observations as to the date of general flowering of any varieties of apples coming within his own personal notice this season.

Particulars as to soil, aspect, temperature, &c., would make the record all the more valuable

Strawson-Swift

(Registered Trade Mark)

Spraying with Strawson-Swift
Arsenate of Lead Paste to destroy
leaf-eating Caterpillars of the
Codling Moth, Winter Moth, etc.

Arsenate of Lead

Strawson-Swift Arsenate of Lead Paste is the original. Its success in the British Isles has been unique.

There are many imitations—but none of these can approach the original in actual results.

Strawson-Swift Arsenate of Lead completely destroys every species of leaf-eating Caterpillars, such as those of the Codling Moth, Lackey Moth, Winter Moth, Magpie Moth, Gooseberry Sawfly, &c.

Just mix with water and apply to the tree by an ordinary spraying machine—it is easily applied, and does not clog the sprayer.

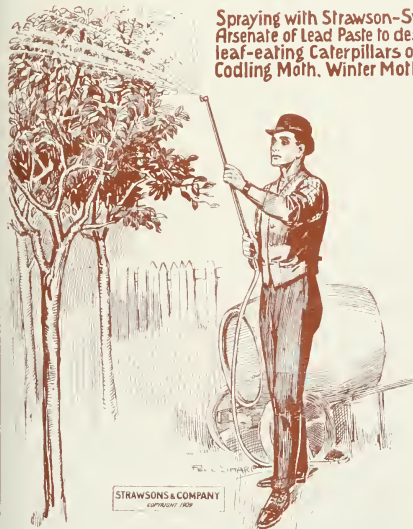
PRICES:—9d. per lb. in 100-lb. kegs, carriage paid; or, 1s. per lb. in 5 lb. kegs. Also sold in several other sized packages.

Ask for full particulars and directions for use.

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[Phone No 1471]



STRAWSON & COMPANY
ESTABLISHED 1860

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On flowers, or a nursery stock, it can be not support for them. Some plants do not bear transplanting as well as others, as geraniums and poppies. Others combine with transplanting as pinks and gaulthier. In preparing the soil for sowing, dig deeply, and well pulverise the soil, mixing (and if fairly well rotted manure). Have the surface soil fine and level. Sow thinly and evenly, and lightly cover with fine sifted soil, press firmly the surface with the back of the spade. A great display of colour can be obtained by the use of hardy annuals, which, with their varying height and their quick, easy, and abundant growth, make them very adaptable for border decoration.

Rainfall

The following observations recorded by Mr. A. Barker will be found useful for purposes of comparison. We should be very pleased to receive exact information upon the rainfall and other meteorological phenomena from different districts in Ireland:

Month	Inches		Greatest fall in 24 hours	No. of Rainy Days
	In.	Cents.	In.	Cents.
January	3.60		.49	22
February	2.00		.38	11
March	3.90		.48	22
April	6.16		1.08	20
May	1.81		.42	12
June	2.20		.95	11
July	2.51		.67	24
August	1.09		.32	13
September	3.56		1.02	15
October	6.30		.95	24
November	2.34		.54	13
December	4.47		.88	20

Total, 40.03 for year. 207 Rainy days.

The Dublin Wholesale Markets.

THE markets throughout March have on the whole been well supplied with fruit, flowers, and vegetables.

The quantity of cut flowers marketed during this period was very large, and prices were fair until about the middle of the month, when large arrivals (principally from Ireland) brought the prices down. As Easter drew near, cut flowers arrived in enormous quantities, and many choice lots of lilies, tulips, narcissus, &c., were to be bought very cheap. In many instances boxes of cut flowers were bought without having been opened or unpacked, nevertheless prices remained very low. Violets have been selling very cheap, and at present these fragrant flowers, so popular in Dublin, are at their best.

Vegetables are selling better as the season advances. Celery is not such a drug on the market, while Brussels sprouts and artichokes are getting dearer. Good Savoy and York cabbage are still very scarce, and for anything approaching a fair heart good prices are to be obtained.

Home grown fruit consisted for the most part of

apples in two or three varieties. Forced strawberries are arriving in small quantities, but are very dear.

I received a large arrival of Williams' Bon Chretien pears from South Africa apparently little the worse for their long journey.

At present there is some very fine lettuce arriving in market from the other side evidently grown on the French system.

The following are the prices for the month:

FRUIT		From	To
		s.	d.
Apples—Bramley's Seedling,	per brl.	11	0
Lane's Prince Albert,	do.	11	6
Annie Elizabeth,	per doz.	0	9
Lord Derby,	do.	0	8
Grapes—Black (best),	per lb.	1	3
Strawberries—Forced,	do.	0	0

FLOWERS		From	To
		s.	d.
Violets,	per doz. bunches	0	3
Aurum Lilies,	per doz.	2	6
Narcissus,	per box	1	4
Do.	per doz. bunches	0	4
Tulips,	do.	0	6
Smilax,	per bundle	0	9

VEGETABLES		From	To
		s.	d.
Artichokes,	per float	1	3
Brussels Sprouts,	do.	2	0
Broccoli,	per basket	2	10
Beet,	per bunch	0	2
Cabbage, York,	per load	15	0
Do. Savoy,	do.	14	0
Celery,	per doz.	1	4
Carrots,	per doz. bunches	0	8
Leeks,	per doz.	0	0
Lettuce,	do.	1	0
Parsley,	per float	0	9
Parsnips,	per doz. bunches	1	0
Spinach,	per float	0	10
Rhubarb,	per doz. bunches	2	0
Seakale,	per punnet	1	8
Turnips, Swedes,	per cwt.	1	3
Do. Garden,	per bunch	0	2
Thyme,	do.	0	4
Sage,	per doz. bunches	1	0

ROBERT HUGH CLARKE.

March 20th, 1910.

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—TRIM—

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THE Committee of the above Society have fixed date for holding Show for Wednesday, 7th Sept., 1910.

PATRICK HEALY, Secretary.

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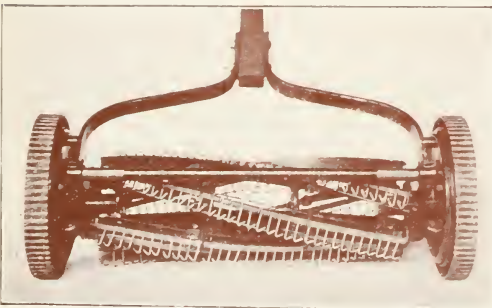
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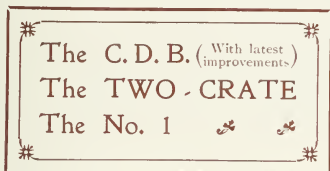
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THE cheapest, most efficient, and convenient preparation for shading greenhouses and all kinds of glass roofs is Smith's "Perfect" Summer Shading, which can be had either white or green. It is applied

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NOTICE.—These Preparations are Poisonous.

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Telephone 1971

Clare Horticultural Society Spring Show.

The most remarkable development of the above society's work is certainly their daffodil and spring flower show (April 14th), which from a very modest attempt in the Spring of 1909, on this occasion developed into a show which would certainly compare favourably with any similar fixture outside Dublin. The show was held, thanks to the kindness of the County Council, in a large room in the now disused artillery barracks, which proved to be an admirable centre for the purpose, and the splendid array of daffodils, &c., constituted a sight which will not be easily effaced from the memories of the numerous lovers of flowers present. No doubt the chief centre of attraction was the magnificent display on Sir J. Gore-Booth's stand, from Lissadell, which contained magnificent blooms of many rare and beautiful daffodils, which were splendidly staged by Mr. J. A. Anderson, of Mayfield Road, Dublin, and was awarded the society's highest award—large silver medal.

There was exceptionally keen competition for supremacy

in the class for best collection of daffodils, in which class the prize was given by the "Lissadell Bulb Farm," and splendid exhibits were staged by Dr. G. N. Macnamara, Col. R. A. Milton Hehn, Major S. C. Hickman, and Miss H. Malcolmson, the richly deserved award falling to Col. Hehn, who was very closely pressed by Dr. Macnamara and Major Hickman.

In the other twenty-five classes there were numerous excellent exhibits, the chief prize winners being Mrs. Clibborn, Mrs. R. Mannsell, Mrs. L. H. Studdert, Mrs. Wilson Lynch, Rev. R. Scott, Col. Tottenham, Marcus Keane, Esq. (president), Rev. P. D. Halloran, R. Vere O'Brien, Esq., and Rt. Hon. Lord Inchiquin, who staged a fine collection of vegetables and salads.

The judging was in the capable hands of Mr. J. A. Anderson, the Irish representative of James Carter & Co., seedsmen, &c., London, and Mr. C. Faulkner, gardener to Lord Dunally, Nenagh, whose awards gave satisfaction to all concerned—a most remarkable achievement.

The attendance was large and fashionable, and the committee are to be congratulated upon their undoubted success.

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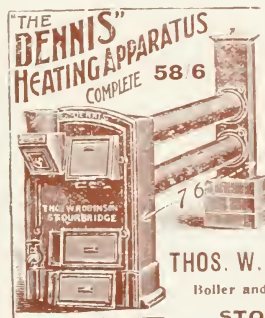
Are indispensable, and are cheapest and best straight from the grower.

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Conspicuously and incontrovertibly ahead of all others!
Most powerful! Most lasting in effect!
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PRICES

Special Concentrated Strength (1 to 80)

3-gall. drums, 14s. 6d.; 6-gall. drums, 27s.;
12 galls., in 2 6-gall. drums, £2 6s.; 24 galls.,
in 4 6-gall. drums, £4 10s.

Double Strength (1 to 50)

3-gall. drums, 10s.; 6-gall. drums, 18s. 6d.;
12-gall. barrels, £1 13s.; 20-gall. barrels,
£2 7s. 6d.; 40-gall. barrels, £4 12s. 6d.;
Drums and barrels charged and returnable.

Bentley's Daisy Killer (LAWN SAND)

Effectually destroys all kinds of weeds on lawns,
and at the same time invigorates the growth and
enriches the colour of the Grass. 1 ton, £19;
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Wholesale Manufacturer—
JOSEPH BENTLEY, Ltd.
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The most successful Non-poisonous Insecticide
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ITS ADVANTAGES ARE—

Certain death to all Insect Pests.
No possible injury to the most delicate Plant, Flower or Foliage.
It is by far the cheapest Insecticide known. One pint makes ten
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SPIDER, Mealy Bug, and Scale can be thoroughly eradicated by
using "NIQUAS," about double the strength required for Fly.

**It is most successfully used by Orange and
other Fruit Growers in the Colonies, &c.**
PRICES—Pint, 1/-; Quart, 19; Half-Gallon, 3/-; Gallon, 5/-
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infesting vegetation under glass is now manufactured in a more
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cubic 100 feet, price 6d. each. Full directions accompany each Cone.

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in Packets containing 8 ozs., for 100 feet of glass, 1/-; 24 ozs., 2/6;
and in Bags of 7 lbs., 10/6; 14 lbs., 20/-.

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Catalogues, &c.

GARDEN FLOWERS, 1910: being the catalogue of Messrs. Watson & Sons, of Clontarf Nurseries. The present issue includes lists of plants used for the summer decoration of gardens. Readers who are following the series of articles on Chrysanthemums appearing in IRISH GARDENING, and anxious to procure plants this month, will do well to consult this catalogue for their wants. Through the courtesy of this firm we reproduce on page 69 one of the several full-page illustrations in this very neat booklet.

ALPINE AND HERBACEOUS PLANTS, SHRUBS, &c., GROWN AT LISSADELL. This is a descriptive catalogue and price list of selected species and varieties of plants grown at the well-known Lissadell Nurseries in Sligo. The selection includes a really fine list of Alpines, and growers of these popular subjects will find in this catalogue many things that will interest them. A second section is devoted to herbaceous plants, and a third to ornamental shrubs. The book is well illustrated. A specimen illustration appears, by permission, on page 75, from which the general character of the plates may be judged.

AMERICAN CARNATIONS. Messrs. Young & Co., Cheltenham, send us an illustrated catalogue of American Novelties in Carnations which should interest a large number of our readers. The varieties are described and priced. We note that this firm makes up special collections at reasonable rates for the convenience of amateurs.

MESSRS. JACK announce an interesting new series for flower lovers and gardeners, entitled "Present-day Gardening." It will consist of a series of volumes, each volume being devoted to a particular flower. The editor is R. Hooper-Pearson, well known as editor of *The Gardeners' Chronicle*. Each volume will be written by an acknowledged expert, and will contain eight plates in colour, photographed direct from actual specimens, by the most improved method of colour photography. The first two volumes will be "Pansies, Violas, and Violets," by William Cuthbertson, and "Sweet Peas," by Horace J. Wright. These will be immediately followed by "Daffodils," by Rev. J. Jacob, "Orchids," by James O'Brien, V.M.H., and other volumes. The text will be principally devoted to practical directions for culture and propagation, and the volumes will be issued at a popular price.

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SAVES WEARY WEEDING.

50 gallons of mixed solution will kill all weeds on 200 square yards of paths, &c.

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1	-	tin for 12 galls. solution	Free Tins
19	-	" 25 " "	and
6-	-	" 100 " "	Cases.

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1	-	gallon	-	2/-	-	drum free
1	-	"	-	3/6	-	" gd. extra
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FUMIGATORS.

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NOTICE

THE Editor of IRISH GARDENING would be grateful to any (Irish) correspondent who would kindly supply him with a record of observations as to the date of general flowering of any varieties of apples coming within his own personal notice this season.

Particulars as to soil, aspect, temperature, &c., would make the record all the more valuable

The Dublin Wholesale Markets.

THE coming of spring and the return of the growing season have had a very beneficial effect upon the markets, as is shown by the large increase in the quantity of produce being marketed.

All through the month large quantities of cut flowers arrived in the market, especially narcissi, which, owing to plentifulness, are cheap. Tulips, lilies, roses, and scarlet anemones are more numerous, while violets and cyclamens are scarcer. Pot plants like spiraea, tulips, cinerarias, and azaleas were very good, and sold well.

Irish apples, though scarce, are very good for so late in the season. Tasmanian apples are arriving in large consignments and in fine condition. Pears continue to arrive at intervals from South Africa. Forced home grapes are making their appearance, while forced strawberries are getting plentiful as the season advances.

All through April there has been a steady increase in the quantity of vegetables sent to market. Cabbage is slowly improving, but good heads are dear. Rhubarb is very plentiful, but is getting cheap owing to large amount marketed. Turnips, Brussels sprouts, and celery are scarce. Seakale (considering the large

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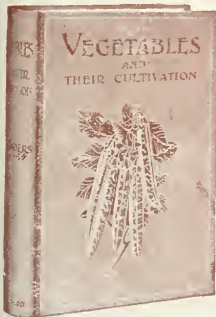
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Apples—Bramley's Seedling,	per bri.	14 6	18 0
Golden Noble	per doz.	0 8	1 6
Annie Elizabeth,	do.	1 0	1 9
Tasmanian	box	12 0	16 0
Strawberries	per lb.	4 6	7 0
Grapes	do.	2 0	4 6

FLOWER

Narcissi,	per doz. bunches	0 8	1 4
Violets,	do.	1 4	2 0
Roses,	per six bunches	0 9	1 1
Scarlet Anemones	per doz. bunches	0 7	1 1
Tulips,	do.	0 6	1 0
Spiraea,	per six-inch pots	0 6	1 2
Azaleas,	do.	0 10	1 5
Cinerarias,	do.	0 4	0 8

VEGETABLES

Brussels Sprouts,	per float	1 4	2 10
Broccoli,	per flasket	2 8	4 0
Beet,	per doz.	0 8	1 0
Cabbage, York,	per load	15 6	25 0
Do. Savoy,	do.	14 0	22 6
Carrots,	per doz. bunches	0 9	1 3
Leeks,	per doz.	0 1	0 4
Lettuce,	do.	0 4	1 0
Parsley,	per float	0 10	1 4
Spinach,	do.	0 7	1 2
Rhubarb,	per doz. bunches	1 4	3 0
Seakale,	per punnet	1 8	2 6
Turnips,	per doz.	0 4	0 8
Thyme,	per bunch	0 3	0 6
Mint,	per doz. bunches	0 9	1 3
Asparagus,	per bunch	3 6	5 6
Cucumbers,	per doz.	3 0	3 8

ROBERT HUGH CLARKE.

April 26th, 1910.

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Strongly Recommended for the Destruction of Weeds, &c.

Price, 2s. per gallon; 5 gallons, 1s. 6d. per gallon; 10 gallons, 1s. 3d. per gallon; Original 40-gallon casks, 1s. per gallon.

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TRIM

Agricultural and Horticultural Society

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PATRICK HEALY, Secretary.

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10 tons	LIGHTON'S Lincolnshire Seed Potatoes.
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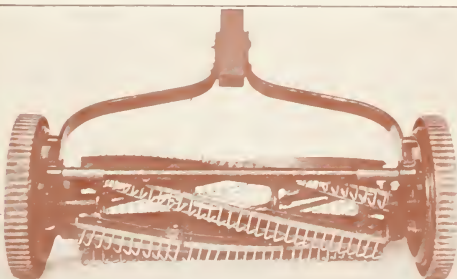
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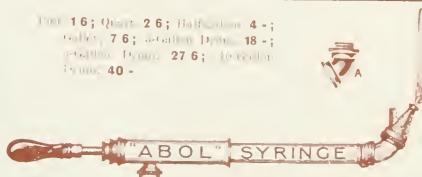


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THE cheapest, most efficient, and convenient preparation for shading greenhouses and all kinds of glass roofs is Smith's "Perfect" Summer Shading, which can be had either white or green. It is applied

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Royal Horticultural Society of Ireland.

AT a meeting of the Council on the 13th ult., at the Society's offices, 5 Molesworth Street, Dublin, at which seventeen members were present, the following motion was proposed by the Chairman, Mr. E. D'Oher, and seconded by the Rev. Canon Hayes, M.A.:—"That we, the Council of the Royal Horticultural Society of Ireland, do respectfully tender to His Majesty King George V. and the Royal Family, and also to Her Majesty Queen Alexandra, our sincere sympathy and condolence in the heartfelt loss sustained by the death of His Gracious Majesty King Edward VII., and that the business of this meeting be adjourned till Monday, the 23rd inst." Mr. F. W. Moore, hon. secretary to the Society, was directed to send the following letters as drafted and approved:—

"TO HIS MAJESTY KING GEORGE V.

"We, the presidents, vice-presidents, officers, and council of the Royal Horticultural Society of Ireland, beg most respectfully to convey to Your Majesty and

the Royal Family our heartfelt sympathy and condolence in the severe loss sustained by the death of His Gracious Majesty King Edward VII., patron of this Society since his accession, and humbly assure Your Majesty of our loyalty and devotion to Your Majesty's throne and person.

"TO HER MAJESTY QUEEN ALEXANDRA.

"We, the presidents, vice-presidents, officers, and council of the Royal Horticultural Society of Ireland, beg Your Majesty's acceptance of our heartfelt sympathy and sincere condolence in the irreparable loss sustained by the death of our beloved Sovereign, King Edward VII."

The resolution and approval of the letters were passed in silence, the members standing.

Regrets at not being able to attend and join in the expression of sorrow and sympathy were received from Sir John Ross of Bladensburg, K.C.B.; Reg. T. Harris, LL.D.; H. P. Goodbody, and G. Watson.

The adjourned meeting for the transaction of business took place on the 23rd ult., when the spring show accounts, including the prizes, as recommended by the Finance Committee, were approved and ordered for

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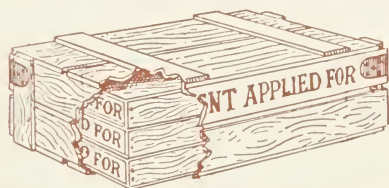
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A large grower in Early Strawberries in the South of Ireland is using this Crate, and finds it far and away the most satisfactory package he has ever seen or used.

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Perth Boots

**FOR GARDEN
SPADE WORK.**

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**8 1/2 Hand built,
Light nailed Boots?**

These are of fine quality, and dressed hide, and you will find in them the satisfaction and reliability you expect. Send a tracing of your foot on paper and P. O. Boots by return. Price list No 105 post free anywhere.

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The most successful Non-poisonous Insecticide of the day.

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Certain death to all Insect Pests.
No possible injury to the most delicate Plant, Flower or Foliage.
It is by far the cheapest Insecticide known. One pint makes ten to twelve gallons for Thrip, Black and Green Fly, &c., whilst RED SPIDER, Mealy Bug, and Scale can be thoroughly eradicated by using "NIQUAS," about double the strength required for Fly.

It is most successfully used by Orange and other Fruit Growers in the Colonies, &c.

PRICES—Pint, 1/-; Quart, 1/9; Half-Gallon, 3/-; Gallon, 5/-; Kegs, each Five Gallons, 22/6; Ten Gallons, 42/6.

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INTRODUCED 1885.

This well-known invention for the entire eradication of all pests infesting vegetation under glass is now manufactured in a more simple and reliable form. The small candle, which will be found packed with each cone, has only to be lighted, and placed on the ground in the centre of the Cone Frame, to produce immediate results. Nothing on the market can equal it for efficacy and cheapness.

Cone No. 3, for a well-secured house of cubic 2,000 to 2,500 feet, price 1/- each. Cone No. 2, for a well-secured house of cubic 1,000 to 1,200 feet, price, 8d. each. Cone No. 1, Carbon, for frames cubic 100 feet, price 6d. each. Full directions accompany each Cone.

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**All Glass Structures
THAT REQUIRE
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The only Genuine, Original, and Improved Article. It has been in general use for **over 30 years**

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**SUMMER CLOUD
SHADING**

And see that you get it!

Sold by all Dealers in Horticultural Sundries throughout the Kingdom, in Packets containing 8 ozs., for 100 feet of glass, 1/-; 24 ozs., 2/6; and in Bags of 7 lbs., 10/6; 14 lbs., 20/-.

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Trade Mark

payment. It was decided that the summer show, fixed for July 6th, to be held in Meenan Sparrin, the use of which has been kindly granted by the commissioners. Various qualified gentlemen were named to be asked to act as judges for the summer show, including an expert for the rose section, for which both the date and the numerous classes have been arranged to make this a primary feature. (Although other sections in the schedule, including the president's challenge cup class for hardy flowers, will be found amply entered for.) The schedule can be had from the secretary (address as above).

Thirteen new members were elected. A letter was read from the Tully Nursery, Co. Kildare, offering a challenge cup and £3, £2, and £1, as first, second, and third money prizes, for tables of Alpine plants in competition at the spring shows held by the society, the conditions including that the money prizes are for *the gardeners*, the offer being accepted by the council with thanks. The thanks of the council were accorded to Captain Ridd, D.L., for specimens of flowering shrubs, which included the beautiful Californian tree poppy, *Dendromecon rigidum*, the pure white form of *Ceanothus puniceus*, and the Australian *Actis gracillima*, the latter a graceful, densely-flowered greenhouse subject; and to Mrs. Green, Carrigra Grange, for a vase of Perpetual flowering carnations, in which we noticed fine examples of Whiser, Mikado, Ceres, and Gladys. For eighteen varieties of Alpine auriculas, including some beautiful blues, the society's cultural certificate was awarded to Mrs. Butler, Prieststown, Meath; the foregoing were sent in on the 13th ult. On the 23rd a table of Alpines, including *Primulas* *litorea* and *Bulleyana*, with various *Dodecatheons* and hardy *cypripediums*, was set up by the Tully Nursery Co.; Messrs. Chas. Ramsay & Sons sending from the Royal Nurseries, Ballsbridge, a dozen vases of fancy and Regal pelargoniums, including some lovely colours, notably the brilliant scarlet *rubra-magnifica*, the thanks of the council being accorded for both these bright and interesting exhibits.

Clare Horticultural Society.

THE County Clare Committee of Agriculture and Technical Instruction, having granted a subsidy to the Clare Horticultural Society for the purpose of holding a "fruit and farm produce" show, a comprehensive list of classes has been arranged for apples and pears, also grain and root crops. Copies of schedule may be obtained upon application to the secretary, Lifford, Ennis.

Stillorgan and Foxrock Horticultural Society.

THE second annual show of this comparatively young society will be held in the grounds of the Convalescent Home, Stillorgan, on Friday, the 22nd of July next. From the schedule we learn that classes (with good prizes) have been arranged for flowers, vegetables, and fruit. Cottagers have special classes for themselves. We sincerely wish the society success, and, considering the character of the gardens and gardeners in the district, are confident that the show will be well worth a visit. The hon. sec. is T. F. Crozier, Avonmore, Stillorgan.

Kingstown Horticultural Society.

THE Kingstown Horticultural Society have issued the schedule of prizes to be awarded at the show, to be held in the People's Park, Kingstown, on Wednesday, August 17th. The schedule, which is illustrated, contains particulars of classes for nearly all kinds of garden plants, and prizes are also offered for the best cultivated small gardens. Classes, too, are provided for exhibits of honey, and demonstrations in the management of bees will be a feature of the show.

The Temple Show.

THE great summer show of the Royal Horticultural Society of England was held in the Temple Gardens, London, on May the 24th, 25th, and 26th, and the tents and grounds were as usual crowded with dense masses of visitors. The exhibits were extremely varied, and included not only the classes usual at such shows, but highly attractive set pieces, such as water gardens (one of which had a most charming flag-stoned walk bordered with flowering irises), rockeries constructed with great skill and much labour, and a most elaborate Japanese garden by Messrs. Carter & Co. The orchids as usual were magnificent, one exhibit, an *Odontodia*, valued at £1,200, was guarded by a watchful policeman all the time. A new rose that attracted great attention was an American red Rambler, *Vinehurliana Eccelsa*, produced by the raiser of Dorothy Perkins, and exhibited by Messrs. Paul. Messrs. Alex. Dickson had an exhibit confined to the new roses raised by themselves at Newtownards. Both this firm and that of Messrs. Hogg & Robertson had highly attractive displays of May flowering tulip, graceful, fresh and faultless in colouration. Among hardy flowers Messrs. Reamsbottom had a handsome assortment of anemones that made quite a distinctive show of colour on the stage. It seemed on passing through the show that every class of plant was represented, stove and greenhouse plants, ferns, border and bedding plants, alpines and water plants, shrubs, forest trees, ornamental trees, fruit trees and vegetables raised in the open and under glass.

Notes.

FRENCH GARDENING. The *Daily Mail* is organising a very ambitious scheme for an Exhibition on Intensive Cultivation in London from July 18th to August 1st. The show will be held at the Royal Botanic Society's Gardens in Regent's Park, where good facilities are offered for such a display. It is intended to have gardens in actual operation, so that a really practical demonstration will be provided for the information of visitors. The displays and demonstrations will include seeds, garden structures, poultry appliances, spray appliances, fruit bottling processes, garden furniture, fertilisers, &c. As an appendage to the show it is intended to erect eighteen picturesque houses of an early English period for the occupation of exhibitors, so that a good deal of brains, money and labour are being expended in order to secure a striking demonstration of the possibilities of small holdings devoted to extensive culture.

NICOTICIDE

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	cubic ft.	each
Half Gallon Tin contains sufficient for	160,000	60 0 0
No. 1 size Tin - 1 pint	40,000	15 7 6
No. 2 size Tin - ½ pint	20,000	7 6 0
No. 3 size Bot. - 6 oz.	12,000	3 0 0
No. 4 size Bot. - 4 oz.	8,000	3 0 0
No. 4½ size Bot. - 2 oz.	4,000	1 8 0
No. 5 size Bot. - 1 oz.	2,000	0 10 0

FUMIGATORS.

1s. each, for 5,000 cubic feet.

NICOTICIDE PLANT SPRAY.

(Use 1 part to 40 parts water for Greenhouse, &c.)

½-pint, 1s. 2d. Pint, 2s.
Quart, 3s. 6d. ½-gal., 8s.
Gallon, 10s. Carriage paid.

**GOW'S LAWN SAND
DAISY ERADICATOR.**

28 lbs., to dress 100 square yards, 7s. 6d.;
1 cwt. keg., 21s. Carriage paid.

GOW'S SLUG AND WIREWORM DESTROYER,
Being a Combined Fertilizer.

**TOBACCO POWDER: QUASSIA EXTRACT;
AND LAWN SAND**

Sold in 6d., 1s., and 2s. 6d. Decorated Tins.

GOW'S

LIQUID WEED KILLER

1 gal. to make 51 gals. in sol., 3/6. No. 1 Tin, 2/6, to make 28 gals.
5 " 25s. 16/6. No. 2 Tin, 6/6, to make 100 ".

"Drum" free, Carriage paid. Tins free, Carriage paid.

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'EUREKA' WEED KILLER.

SAVES WEARY WEEDING.

50 gallons of mixed solution will kill all
weeds on 200 square yards of paths, &c.

POWDER.

1/- tin for 12 gals. solution } Free Tins
19 " 25 " " " and Cases.
6 " 100 " " " "

LIQUID. 1-50.

½ gallon - 2 - drum free
1 " - 3/6 - " 9d. extra
2 " - 6/6 - " 1/6
5 " - 14 - " 2/6
10 " - 25/6 - cask 5/-



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(PATENT).

CONSISTS of light iron Frames of special
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stretched between, supported at intervals by
Intermediate Standards. No trouble, always
ready, and will last for years with only a few
pence outlay for any necessary renewal of
training wire. Does not harbour insects. Made
4 ft., 5 ft. and 6 ft. high.

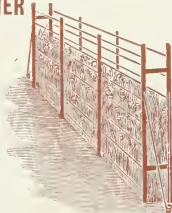
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"I wish to thank you for your prompt atten-
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"I have from time to time procured addi-
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my first experience of them I have found them
to serve all my requirements. The Pea Trainers,
in my opinion, could not be improved; they
are perfect in every way. The peas can be re-
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A Manure that destroys Wireworm, Slugs and
Grubs in the Soil, and Caterpillars on Plants,
Fruit Trees, &c. Prices—1/- and 2/- Tins;
14 lb. Bag, 3/-; 28 lbs., 5/-; 56 lbs., 8/-;
1 cwt., 15/-.

DEMON INSECTICIDE

(Non-Poisonous.) Kills all Insects. Prevents
and Cures Mildew. Prices—1 Pint (to make
12 gallons), 1/-; Quart, 2/-; ½ Gallon, 3/-;
Gallon, 4/-.

CLIMAX LAWN SAND

Transforms Weedy Lawns. Kills the Daisies,
Plantains, &c., and improves the Grass.
Prices—Tins, 1/3 and 2/-; 14 lb. Bag, 3/6;
28 lbs., 6/-; 56 lbs., 11/-; 1 cwt., 20/-.

CLIMAX WEED-KILLER

Kills all Weeds on Garden Paths, Walks, &c.,
and keeps the surface clean and bright for
from 12 to 18 months. Prices—No. 1 Tin, 2/-;
2 Tins, 3/6; No. 2 Tin, 6/6; 2 Tins, 12/6.

Boundary Chemical Co. Ltd.
27 Cranmer Street, LIVERPOOL

Flowering of Apples.

NOTES MADE ON MAY 15, 1910, AT MIRAMAR,
CULTRA, CO. DOWNS.

Frogmore Prolific, in full flower, but very scarce; Stirling Castle, small tree, a mass of bloom; Lane's Prince Albert, in bud, a little heat would bring it out in two days, scarce; Peasgood Nonsuch, bud only and poor; Bismarck, full flower, almost over, scarce, there are never more than a few apples on this tree; Codlin Keswick, perfection of flower, very prolific; Northern Dumpling, full flower, very good, a mass of bloom; Duchess of Oldenburg, full flower, some petals falling, it is covered with bloom; Lady Henniker, in bud far back, fair; Cox's Pomona, bud and late and poor; Sturmer Pippin, coming into bloom, scarce; Queen Caroline, coming into bloom, scarce; Belle Pontoise, in bud, but very few, bad; Gravenstein, in flower, but few and unsatisfactory.

[Mrs. Inglis, who has favoured us with the above notes, states that Miramar is on the shores of Belfast Lough, quite close to the sea, is not at all sheltered, and the soil a rather heavy clay. The trees are all trained as cordons.]

WALLFLOWERS.—Villa gardeners should sow wallflower seed at once in order to raise a stock of plants for next spring and early summer flowering. The front garden of a Dublin suburban house, which we happen to pass every day, has been for weeks past one glorious sheet of colour from hundreds of flowering spikes of this prolific and richly coloured flowering plant. The whole garden is planted with wallflower and only wallflower, and the result is effective in the extreme. This is far better than filling the relatively small area with different kinds of plants, with different habits of growth and diversity of colour. The aim was apparently to secure uniformity of form and colour, and the effect is as harmonious as it is charming.

CHRYSANTHEMUMS.—All plants which are not intended for pot culture and are not already in the ground should be put out at once. If the plants are required bushy and dwarf, pinch back the side shoots during the present month. Secure the shoots to stakes. Water must be given freely when required. The portion of shoot pinched off may be long enough to form cuttings. Insert singly in thumb pots, pinch over the points when growth has well begun, and allow three shoots to develop and bloom. These dwarfed plants will make excellent specimens to put to the front of the larger ones. July will see some of the earliest pompons in bloom, and will last till September, when the larger flowering varieties will blossom. The single chrysanthemums are very effective for decorative purposes. They should not be so severely thinned as the larger varieties. Their flowers are naturally smaller, and so the more bushy the plant is the finer display of flowers there will be.

Catalogues.

SUMMER BEDDING PLANTS. Wm. Watson & Sons.—The summer cometh when the villa gardener hastens to plant out his flower beds with plants specially chosen to give the gayest effect to the surroundings of his home,

To Secretaries of Irish
Horticultural Societies

A SPECIAL CARD

Has been prepared for the use
of Exhibitors at Flower Shows.
Copies of this Card (with name
of Society printed thereon) will be
gladly sent, free of charge, to Local
Secretaries on getting particulars
as to number required, date, &c.

Office of 'Irish Gardening'
53 Upper Sackville Street
DUBLIN

and here is a carefully prepared booklet that will materially help him in the choice of subjects. There are the old favourite geraniums, asters, and begonias, the gorgeous chrysanthemum, the ever useful *Lobelia ageratum*, and flowers of old association and sweet memory, such as heliotrope, marigold and mignonette, musk and violas, auriculas, marguerites, and very many more.

FLORAL GUIDE OF PLANTS. H. Cannell & Sons.—This is a very complete catalogue indeed of all the different kinds of flowers usually grown in gardens—in fact in some respects it is unequalled in its lists of varieties. Gardeners are sure to find a good deal of interest in scanning its 200 odd pages.

JONES'S SUMMER CATALOGUE OF GARDEN PLANTS. Gowran, Co. Kilkenny.—A brief but carefully compiled list of useful plants most suitable for summer beds and borders, grown by a specialist who has a great judgment in matters of selection. We should like to draw particular attention to the nursery "stuff" listed in the present catalogue.

MESSRS. E. A. WHITE, Ltd., the manufacturers of "Abol" insecticides, send us a booklet entitled "Insects and Mildew on Garden Plants and Trees and their Destruction." It gives an account of a large number of tests on the extermination of all the more common fungi and insect pests with the firm's own preparations, together with the special precautions to be used in particular cases. The firm pledges its reputation upon the absolute accuracy of the described tests.

NOTICE

THE Editor of IRISH GARDENING would be grateful to any (Irish) correspondent who would kindly supply him with a record of observations as to the date of general flowering of any varieties of apples coming within his own personal notice this season.

Particulars as to soil, aspect, temperature, &c., would make the record all the more valuable

LISTER'S TUBS

FOR PALMS, SHRUBS, &c.



Made
throughout at
Dursley
from the
Finest
Oak and Teak
by
Skilled British
Workmen



Write for particulars to Sole Makers—

R. A. LISTER & Co., Ltd., DURSLEY, Glos.

The Dublin Wholesale Markets.

MAY has been a busy month in the markets, and produce continues to arrive in ever increasing quantities as the season advances.

The demand throughout the month for all classes of produce was good, and in most cases the prices realised were fair, yet in some cases certain vegetables, and some varieties of cut flowers were cheap owing to large supplies, as in the case of scarlet anemones and rhubarb.

At present fruit is plentiful, and good home-grown grapes can be obtained at a reasonable figure. Irish gooseberries are being marketed in limited quantities, and about the middle of the month people with bushes to thin would have found it very profitable to send their thinnings to market. Forced strawberries are cheap considering season. Irish apples are scarce, Bramley's Seedling being the principal variety. Australian apples and South African pears arrive in quantities that maintain the prices without overstocking the market.

Cut flowers have been abundant and prices low, large bunches of anemones, roses, tulips and narcissi being obtainable at a very low figure. Lily of the valley sells better when not too open, and in this condition it is selling well at the present time.

Vegetables are plentiful—seakale, asparagus, broccoli and particularly rhubarb, are most in evidence. Home-grown tomatoes are arriving in limited quantities. First-class cabbages are yet scarce, and to obtain the best price for choice heads a good plan is to market them in crates holding six to eight dozen.

The following is the list of prices for the month:—

FRUIT		From	To
		s. d.	s. d.
Strawberries (forced),	per lb.	3 0	6 0
Gooseberries,	per qrt.	0 5	0 10
Grapes (Best Black),	per lb.	2 6	4 0
Apples (Bramley's),	per brl.	12 0	16 6
Do. (Australian),	per box	8 0	15 6
Pears (South African),	do.	5 6	9 6

FLOWERS			
Aurum Lilies,	per bunch of six	1 6	2 6
Lily of the Valley,	per bunch	0 2	0 4
Scarlet Anemones	do.	0 6	0 8
Narcissi (Pheasant Eye),	do.	0 4	0 6
Tulips,	do.	0 4	0 9
Carnations,	per doz.	1 4	4 6
Roses (Red),	per bunch	0 8	1 10
Gladioli (The Bride),	do.	0 8	1 1
Smilax,	per bundle	0 5	1 0

VEGETABLES			
Broccoli,	per flasket	3 6	5 6
Beet,	per doz.	0 4	0 6
Cabbage (York),	per load	16 0	21 0
Carrots,	per bunch	0 4	0 7
Leeks,	per doz.	0 4	0 6
Parsley,	per float	0 5	0 9
Spinach,	do.	0 6	0 8
Rhubarb,	per 12 doz.	1 2	3 6
Seakale,	per bunch	0 10	1 4
Asparagus,	per bundle	1 0	2 9
Salads Cucumbers,	per doz.	2 0	4 0
Tomatoes (home),	per lb.	0 10	1 0
Lettuce,	per doz.	0 3	0 6
Scallions,	per bunch	0 2	0 4
Herbs—Mint,	per doz. bunches	0 3	0 5
Sage,	do.	0 9	1 2
Thyme,	do.	0 10	1 9

26th May, 1910.

ROBERT HUGH CLARKE.



Skilfully, quickly, and cheaply, for any purpose requiring illustrations, but, as we have been blockmakers to "Irish Gardening" since its first issue, we are in a very good position to handle all Horticultural subjects, for Seedsmen's Catalogues and Advertisements.

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WINDOW GLASS

Polished Plate for Shop Windows.

Horticultural Glass at Lowest Rates.

DEATH TO THE WEEDS!

HOYTE'S WEED KILLER.

Strongly Recommended for the Destruction of Weeds, &c.

Price, 2s. per gallon; 5 gallons, 1s. 6d. per gallon; 10 gallons, 1s. 3d. per gallon; Original 40-gallon casks, 1s. per gallon.

HOYTE & SON, The City of Dublin Drug Hall,
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Please mention this Paper

BEST ECLIPSE SALT

Also Ground and Lump Rock

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MALAHIDE, SKERRIES & BALBRIGGAN

BECKER BROS.

PRICES—
2/5, 2/2, 2/-, 1/10, 1/8, 1/6, 1/4, 1/2.
PRICES—
2/5, 2/2, 2/-, 1/10, 1/8, 1/6, 1/4, 1/2.

TEAS.

8 Sth. Gt. George's St.

AND 17 Nth. Earl St.

Dublin.

Miscellaneous Section

XL ALL NICOTINE FUMIGATOR
LIQUID INSECTICIDE and
WEED KILLER (Poisonous)
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14 years. New introduction, **RICHARDS' ARSENATE**
OF LEAD PASTE (poisonous) for Caterpillars, &c.

The following non-poisonous preparations have also
given users great satisfaction:—

XL ALL SPONGING WASH, equally good for syringing or
spraying. **XL ALL EXTRACT OF QUASSIA**, **XL ALL ORCHARD**
AND **FRUIT TREE WASH**, both in liquid and paste form.
CUCASA (patent), improved copper fungicide. **XL ALL**
FERTILISER is the best for all garden crops.

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IF YOU HAVE A GLASS ROOF THAT LEAKS,
a Conservatory to repair, or any kind of glazing
work to be done, **CARSON'S PLASTINE** will save money,
time, worry and annoyance consequent on the use of
ordinary putty, which cracks, crumbles, and decays.
It saves the expense of constant renewals. Carson's
Wood Preservative in green and brown, for Palings,
Trellis Work, &c. The best paint for Greenhouses is
"Vitreolite." Write for Catalogue. **CARSON'S, 22**
Bachelor's Walk, Dublin.

TRIM

Agricultural and Horticultural Society

THE Committee of the above Society have fixed date
for holding Show for Wednesday, 7th Sept., 1910.

PATRICK HEALY, Secretary.

AUTO-SHREDS Is CERTAIN
LEAD-TO DEATH to
Leat-mining Maggots, Mealy Bug and
all Pests infesting plants under glass, &c.
Simple to use, no apparatus required. In
Boxes to Fumigate 1,000 cubic feet, 6d.;
10,000 cubic feet, 3s. 6d. each. Obtained
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apply direct—

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THE SECRETARY

Department of Agriculture and Technical
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At—**FIDDOWN FRUIT AND FLOWER**
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Instruction can be given to lady pupils. For Price
List or Prospectus apply to Principal.

ANOTHER PROOF!

HAVING secured space in **IRISH GARDENING** for
this advertisement of Bedding Plants, &c., I
now find (May 25th) that many items of my very ex-
tensive stock of Summer Bedding and Vegetable Plants
are practically all bespoke. Do not these early orders
having all being placed by customers satisfied in past
years—afford conclusive evidence of the quality of my
Nursery products? Lists of varieties still obtainable
on application. I CHALLENGE THE KINGDOM
for better quality at the same prices.

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200 Highest Awards; Gold Medals from
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Swift, Safe, and Sure.

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on quantities of 28 lbs. and upwards.

Ask your Seedsmen or apply directly to the
Sole Proprietors and Manufacturers,

WM. COLCHESTER & CO.,
IPSWICH, England,



KINGSTOWN HORTICULTURAL SOCIETY

Under the Patronage
of
His Excellency



The Lord Lieutenant
and
Counsellors of the County

KINGSTOWN FLOWER SHOW

PEOPLE'S PARK
* WEDNESDAY, 17th AUGUST, 1910 *

VALUABLE PRIZES IN CLASSES FOR . . .

Flowers, Fruit and Vegetables. Cakes and Honey

SPECIAL
COTTAGERS' SECTION
SEVERAL
AMATEUR CLASSES



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North Kildare Horticultural Society

SHOW OF FLOWERS, VEGETABLES, FRUIT AND HOME INDUSTRIES

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On Wednesday, 27th July, 1910

Gates open 10 a.m. to 6 p.m.

Exhibition closes 6 p.m.

Admission, 6d.

Children, 3d.

Admission only by Main Entrance Gate opposite Celbridge Station

MILITARY BAND

SPORTS, DONKEY RACES, &c.

DANCING COMPETITIONS

(Open to all Kildare)

Entry Free for all Entries, which close Day before
Show & closed by Mr. P. J. & K. E. O. H. (all ages)

	1st Prize	2nd Prize
Irish Jig	10 -	5 -
Irish Reel	10 -	5 -
Hornpipe	10 -	5 -

Three First Prizes given by Mrs. Hone, Celbridge

REFRESHMENTS ON GROUNDS

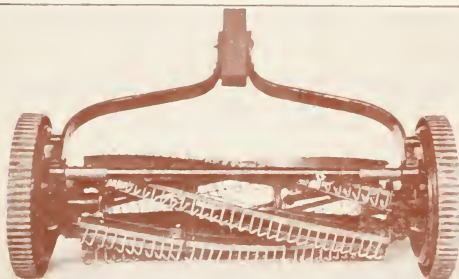
Hazelhatch Station within one mile of Show Ground

FINGAL HORTICULTURAL SOCIETY

THE ANNUAL SHOW will be held at MALAHIDE on Saturday, 10th July, 1910 . . .

For Schedule and Entry Forms apply to the Hon.
Secretary, Miss PLUNKETT, Portmarnock House,
Baldoyle. Entries close July 9th.

One's "LASSO" attachment (Patent applied for) for cutting "blackheads," or "bents" and "thraneens"—makes a rough lawn smooth and a smooth lawn smoother; can be fitted to most of the various makes of machines in use



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Naas District Horticultural Society

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Entries close 4th August



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SUMMER SHOW

WILL BE HELD IN THE

Military Barracks — ENNIS

On 10th AUGUST, 1910

Entries close 2nd August. Schedules and all particulars from
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as named by the late Mr. F. W. Burbidge; Agnes Pearson, a lovely Parvi; King of the Poets, a come to stay market flower; Prometheus, an immense Parvi, with Rosa Bedford, named also by Mr. Burbidge.

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✍ OUR LIST this season will be ready early in July, and we ask for the full confidence of the public over this famous Irish Industry of ours, now running over quarter of a century.

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8/6, 10/6, 14/- 14/6

Bend "A," 1/6 extra



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SOLE PROPRIETORS AND MANUFACTURERS

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Royal Horticultural Society of Ireland.

At the meeting of the council, Mr. J. Wylie Henderson presiding, June 10th, the following letter was read :

"Dublin Castle, 24th May, 1910.

"To the Hon. Secretary,

"Royal Horticultural Society of Ireland.

"SIR,—I am directed by the Lord Lieutenant to inform you that the resolution adopted by the president, vice-presidents, officers, and council of the Royal Horticultural Society of Ireland has been laid before His Majesty King George the Fifth, who has commanded His Excellency to thank the society for their message of sympathy and condolence on the lamented death of His Gracious Majesty King Edward the Seventh, and for their assurance of loyalty and devotion.—I am, Sir, Your obedient servant,

J. B. DOUGHERTY."

Final arrangements were made for the summer show to be held in Merrion Square on Wednesday, July 6th, including the engagement of a military band and the providing of tea. Prices of admission to the show were fixed at 2s. from 2 o'clock till 5; tickets purchased before day of show, and which may be had at the principal seed shops in the city, being 1s. 6d; admission from 5 till 7, when show closes, being 1s. The show will be open to members of the society only at 1 o'clock by signing members' book at entrance. The usual show committees were appointed. Members' sets of six transferable tickets have been forwarded in accordance with Rule VII., and are available for either the summer or autumn shows. Mr. J. W. Grant, the rose expert, has kindly promised to adjudicate in the rose section, all the classes of which promise to be unusually well filled. On the proposition of Mr. G. M. Ross, T. W. Russell, Esq., Vice-President of the Department of Agriculture, was elected a member of the society.

Royal Agricultural Society of England.

Horticultural Show at Liverpool.

IN conjunction with the show of the Royal Agricultural Society at Liverpool a very successful flower show was arranged. The exhibits occupied three large tents, and were a source of much interest to the visitors to the show. A very fine lot of sweet peas secured an award for Miss Hemus, Holdfast Hall, Upton-on-Severn. Among the new varieties included in the collection, Guy Hemus, mauve; Paradise Swziana, flaked; and Elizabeth Hemus, pink, were noticeable. The flowers, of another newcomer, Paradise Peach Blossom, were exceptionally fine and of good substance. Mr. A. F. Dutton, Iver, Bucks, staged a magnificent collection of carnations, including Mikado, a rich deep mauve; a new variety "Iver Yellow," not yet on the market, but which for its form, distinct lemon-yellow colour

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and graceful habit is destined to become very popular. Other varieties, Windsor, pink, Lawson Enchantress, cerise pink, and Beacon, crimson, were also staged in fine condition. Rees, Limited, had two exhibits, one of floral designs in which some new styles and combinations of colour were utilized, and the other of herbaceous and alpine plants. These latter made an excellent display and occupying portion of the centre of the largest tent the plants were arranged to excellent effect. Messrs. Alex. Dickson & Son, of Dublin and Belfast, staged a splendid collection of roses which was a busy centre of attraction during the continuance of the show. Another Irish firm, Messrs. Hogg & Robertson, exhibited a collection of Iris, Gladioli and similar plants. Very few amateurs exhibited, but the vegetables shown by the Hon. Vicary Gibbs of Elstree, were, as usual, excellent.

In none of the competitive classes were the entries numerous, but all the exhibits were of a high standard. The trade displays occupied nearly the whole of the staging.

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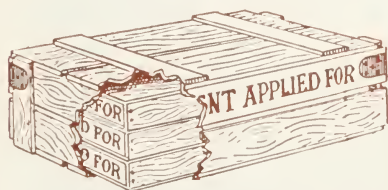
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A large grower in Early Strawberries in the South of Ireland is using this Crate, and finds it far and away the most satisfactory package he has ever seen or used. *Full particulars from*

R. d'E. DAY, The Nursery, SUTTON SCOTNEY, Hants.

Challenge Cup for Alpine Plants.



Photograph of the Challenge Cup for the best collection of Alpine Plants presented for competition by the proprietors of the Fully Nursery, Kildare to the Royal Horticultural Society of Ireland.

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Flower Pots, Seed Pans

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Destroys all Disease Germs
Extirpates all Insect Life
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Cross's Garden Fertiliser . . .
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BENTLEY'S .. COMPOUND LIQUID .. QUASSIA EXTRACT NON-POISONOUS

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The safest, surest and cheapest Insecticide for destroying . .

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CELERY, CARROT, TURNIP, AND
ONION FLY, CATERPILLAR
—AND FOR GENERAL SPRAYING PURPOSES—

MANY hundreds of thousands of gallons of Plant Wash
made from this Extract are used annually throughout
the country by Gardeners, Nurserymen, Fruit and Hop
Growers. THE INSECTICIDE of Insecticides for
HOPS, ROSES, CHRYSANTHEMUS, TOMATOES,
WALL AND BUSH FRUITS, and other Trees. May
be used anywhere and everywhere with absolute safety

Each gallon makes from 80 to 100 gallons
Ready for use, costing about 1d. per gallon

PRICES
20 galls., 36 per gall.; 10 galls., 37 per gall.; 5 galls., 38
per gall.; 1 gall., 42; ½ gall., 26; 1 quart, 16; 1 pint, 1-

CARRIAGE PAID ON 76 ORDERS AND UPWARDS

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IMPORTANT TO—
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of the day.

ITS ADVANTAGES ARE—

Certain death to all Insect Pests.
No possible injury to the most delicate Plant, Flower or Foliage.
It is by far the cheapest Insecticide known. One pint makes ten
to twelve gallons for Thrip, Black and Green Fly, &c., whilst RED
SPIDER, Mealy Bug, and Scale can be thoroughly eradicated by
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*It is most successfully used by Orange and
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PRICES—Pint, 1/-; Quart, 1/9; Half-Gallon, 3/-; Gallon, 5/-;
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packed with each cone, has only to be lighted, and placed on the
ground in the centre of the Cone Frame, to produce immediate
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to 1,200 feet, price 8d. each. Cone No. 1, Carbon, for frames
cubic 100 feet, price 6d. each. Full directions accompany each Cone.

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**SUMMER CLOUD
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And see that you get it!

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Sundries throughout the Kingdom,
in Packets containing 8 ozs., for 100 feet of glass, 1/-; 24 ozs., 2/6;
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Forthcoming Local Shows.

Kingsdown Horticultural Society.

August 17th.—To be held in People's Park. This the second show of the society will, it is hoped, repeat the distinct success of last year. Secretary, Technical Schools, Kingstown.

Fingal Horticultural Society.

July 10th.—To be held at Malahide. Exhibits will include not only flowers and other products of the garden, but specimens of home industry as well. A rather novel competition has been instituted—namely, a money prize for the largest number of *dark queen* wasps. Secretary Miss Plunkett, Baldoyle.

Naas District Horticultural Society.

August 10th.—Exhibits to include flowers, fruit, and vegetables. Three silver cups are to be competed for. Secretary, Dr. D. Donel Browne, Naas.

County Clare Horticultural Society.

August 10th.—To be held at Ennis. Strong competition is expected in vegetable section, Jones Challenge Cup being the big prize. Other special prizes are offered. Secretary, H. Bill, Lifford, Ennis.

North Kildare Horticultural Society.

July 27th.—To be held at Celbridge. Exhibits to include garden produce and articles of home industry. The sports will include dancing and donkey races.

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POWDER WEED KILLER

Dissolves Quickly in Cold Water

Size (No. 1 ..	Sufficient to make 25 gallons ..	19/-
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SOLUBLE PARAFFIN—mixes instantly with water and does not separate.

ARSENATE OF LEAD PASTE—for destroying all leaf-eating insects.

"FUMERITE"—for destroying all ground vermin. To be dug into the soil.

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DEMON INSECTICIDE

(Non-Poisonous.) Kills all Insects. Prevents and Cures Mildew. Prices—1 Pint (to make 12 gallons), 1/-; Quart, 2/-; 1/2 Gallon, 3/-; Gallon, 4/-.

CLIMAX LAWN SAND

Transforms Weedy Lawns. Kills the Daisies, Plantains, &c., and improves the Grass. Prices—Tins, 1/3 and 2/-; 14 lb. Bag, 3/6; 28 lbs., 6/-; 56 lbs., 11/-; 1 cwt., 20/-.

CLIMAX WEED-KILLER

Kills all Weeds on Garden Paths, Walks, &c., and keeps the surface clean and bright for from 12 to 18 months. Prices—No. 1 Tin, 2/-; 2 Tins, 3/6; No. 2 Tin, 6/6; 2 Tins, 12/6.

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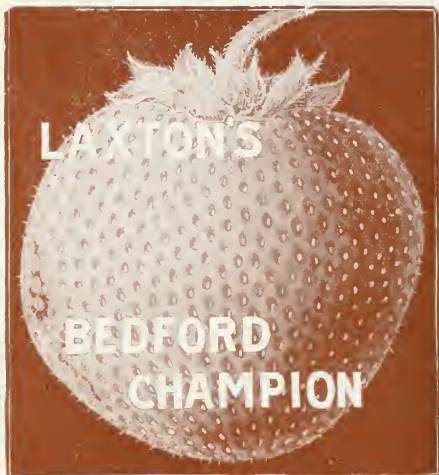
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Royal Horticultural Society of Ireland

THE AUTUMN SHOW

OF THE SOCIETY

By kind permission of VISCOUNT IVEAGH, K.P.
will be held in

The Grounds of His Lordship's Stephen's Green
Residence (Entrance from
Harcourt Street)

ON TUESDAY, 23RD AUGUST, 1910

(EXHIBITORS WILL PLEASE NOTE CHANGE OF DATE)

✿ ✿ Entries close on 16th August ✿ ✿

THE Schedule, comprising 79 classes, with Three Challenge Cups to be competed for, having for its more prominent features classes for Roses, Dahlias, Begonias, Gladioli, Carnations, and Sweet Peas, with an extended Fruit Section, can be had from the Secretary, 5 MOLESWORTH ST.

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Royal Horticultural Society of Ireland.

At the usual show meeting of the council held in Merrion Square, July 6th, with but few members absent, it was unanimously resolved that the date of the autumn show originally fixed for Thursday, August 25th, should be changed to Tuesday, August 23rd, entries for same closing on August 16th. The autumn show, by kind permission, will be held in the grounds at the rear of Lord Iveagh's residence, Stephen's Green, the entrance to which is from Harcourt Street. At the monthly meeting of the council, July 15th, members present being Messrs. W. F. Gunn, R. Anderson, Ernest Bewley, T.C., G. M. Ross, M.A., and Judge Bird, with Mr. H. P. Goodbody, presiding, a letter was read from the Home Office, Whitehall, acknowledging with thanks the society's resolution of condolence on the death of His late Majesty King Edward VII. Summer show accounts, including cash prizes, as recommended by the Finance Committee, were ordered to be paid. Judges were appointed for the autumn show. It was agreed that the challenge cups be photographed for reproduction in the 1911 schedule.

Mrs. A. Chatterton, Kilgarron, Enniskerry (proposed by Mr. D'Olier), was elected a member; Mr. Patrick Field, Shanganagh Park, Shankill (proposed by Mr. Watson), being also elected, with Messrs. W. D. Besant and E. Little (proposed by Mr. W. H. Paine) as practical members. Ten varieties of new hybrid delphiniums from the Giltown Nurseries, Kildullin, and a fine collection of roses from Mr. T. F. Crozier, Avonmore, Stillorgan, were accorded the council's thanks.

Stillorgan and Foxrock Horticultural Society's Flower Show.

It was not the best of weather, but the showers laid the dust, and the grounds immediately surrounding the tents were very fresh; even inside there was not that close, suffocating heat that one usually associates with a flower show. The tents were more roomy than ordinary, and the exhibits seemed on the whole fresher. This was particularly noticeable in the roses, which in a close atmosphere soon lose their tone.

From quite an impressionist's view this show was not only an advance on any local show I have ever seen, but certainly several points better than the recent R. H. S. show in Merrion Square. There seemed more space and more style, while the exhibits looked a better average and much fresher. The tent containing the trades and other exhibits was especially interesting. The former lined the inside of the tent, while down the middle of the central space was a row of nine tables staged from private gardens, with choice flowering plants, foliage plants, and ferns. Much taste was displayed in the draping of the stages, and the whole effect on entering the tent was very striking.

The trade was well represented. Messrs. Chas. Ramsay & Son had some very fine begonias. Among other things there was a handsome basket of roses and some good carnations. Messrs. Bröwett had a good show of ferns well staged, and especially to be noticed were some handsome silver ferns. Messrs. Pennick & Co. exhibited Alpines, and their staging of them among rocks was very effective. In the collection were some fine *Primula capitata*, *Linum campanulatum*,

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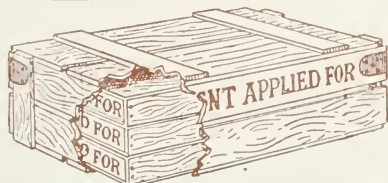
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Dianthus Emperor William and new specimens of Japanese maple. Messrs. Alex. Dickson and Sons had a good representative collection of herbaceous plants, including a number of different varieties of *Veronica*. They had two new carnations, Lord and Lady Powerscourt. Lord Powerscourt was of a deep orange buff, flaked with red of a terra cotta effect, and Lady Powerscourt was of a deep buff, with lavender flakes. These were raised on the Powerscourt estate. There was a very fine stage of herbaceous plants and Alpines all the way from Sligo from the Lissadell Nurseries. They looked remarkably fresh. Then there were Hugh Dickson's exhibit of roses, most wonderfully staged and most charmingly perfect to an ordinary rose grower. They had all the freshness and all the bloom on them as though they had been picked that moment. They were so fresh, so equal, so full of tone that they might rather have been some marvellous pieces of workman ship in wax. There were some glorious Leslie Hollands and a collection of Lyon Rose. Do ordinary people know, I wonder, what a rose can be made to look like by the extraordinary skill of an expert?

The rose section was well represented. Mr. Crozier, the Secretary, captured most of the firsts quite easily, and set a good standard for Stillorgan and Foxrock amateurs to beat next year. There was a big show of fine herbaceous plants by Judge Bird.

Some beautiful begonias were exhibited by Mr. Crozier. They had that same freshness and finish as in Dickson's roses. I believe there were two new varieties among them. The sweet peas formed a good class.

I have seldom seen better floral decorations. The baskets of flowers were so evenly artistic that I think the judges must have settled on their favourite flowers or by a "toss-up." I am sure I should have been compelled to have given a prize to the basket of violas, and certainly a consolation to the basket with the gorgeous geraniums and dark foliage which, having met with an

accident, yet still gave the suggestion of what it had been. I chanced to meet the Secretary, and for a few minutes got caught up in the whirlwind of his energetic activity, so that I can to some extent understand the reason of the wonderful success of this vigorous two-year old Society. E. A.

Note.

PRACH CUR. With respect to our observations on this disease last month a correspondent writes to say that "*Medela*" prepared by Messrs. Bunyard of Maidstone, although not a *cure*, is certainly a *preventative* against the spread of the fungus causing the disease.

Shows.

THE following shows (among others) will be held during the present month: On the 10th, Naas and Clonsilla; on the 11th, Banbridge; on the 17th, Kingstown; on the 23rd, Royal Horticultural in Dublin.

The Ferny Flower Show that took place last month, and which has now become a very pleasing annual function, was most successful, the exhibits in many cases being rarely rich and beautiful in bloom. The committee deserve hearty congratulations on the result of their efforts, and a special word of praise is due to Mr. H. J. Lucas, the energetic and painstaking hon. sec. The judging was admirably carried out by Mr. and Mrs. Bury-Barry.

Catalogues.

WE have received ANT. ROOZEN & SON'S descriptive catalogue of Dutch and other bulbs, and THE BOTANICAL DYEING, a particularly attractive and beautifully illustrated booklet issued by Christopher Bourne of Bletchley; also the Carnation catalogue (Borden, Malmaisons, and Winter-flowering) issued by Hayward Mathias, Medstead.

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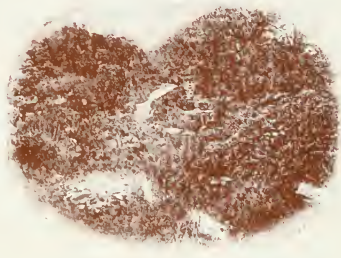


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Gallon, 4/-.

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The Dublin Wholesale Markets.

THE month of small fruits is drawing to a close, and during that time there has been no lack of supplies—strawberries predominating, raspberries being a good second. Currants at present are at their best, and are apparently a good crop. Gooseberries are now arriving in large quantities, the ambers being succeeded by the large red and green varieties. Home-grown peaches and grapes are arriving in fairly large quantities, and are both well grown and packed.

Home growers should try and market soft fruit—like strawberries and raspberries—in a more suitable manner, as they lose about half their value through the slovenly way they are sent to market. Raspberries should be marketed in vessels that would retain the juice. Strawberries should be graded for dessert purposes, and packed in five pound lots, while for cooking and jam, twelve pound lots would be sufficient. The methods of packing certain lots of fruit that command the top price on the market might be copied with advantage and financial gain by those who are complaining of the low price of fruit.

Flowers have not been as well represented as might be expected considering the season. Roses, gladioli and sweet peas are most in evidence, while annuals, herbaceous stuff, lilies and hothouse blooms are in smaller quantities. The prices on the whole for flowers are small. Vegetables are marketed in limited quantities. Summer crops, like peas, beans, turnips and cauliflowers, are most in demand. Salads were also bought up quickly during the warm weather. Cabbages are very cheap and scarcely realise the cost of production.

At present, as has been the case for the past year, cross channel and foreign produce is bought in preference to Irish grown, owing to the superior way in which it is packed.

The following is the list of prices for the month:

FRUIT		From		To	
		s.	d.	s.	d.
Strawberries,	per lb.	0	4	1	0
Gooseberries,	per quart.	0	2	0	3½
Raspberries,	per lb.	0	3	0	4
Grapes,	per lb.	0	10	1	10
Peaches,	per doz.	3	0	6	6
Cherries,	per lb.	0	4	0	8

FLOWERS

Gladioli,	per doz.	0	2	0	3½
Roses,	per bunch	0	2	0	6
Pentstemons,	do.	0	1	0	3
Carnations,	do.	0	3	1	6
Lilies,	per doz.	0	3	0	9
Sweet Peas,	per bunch	0	1	0	4
Geraniums,	do.	0	3	0	9
Greenery,	per bundle	0	4	1	0

VEGETABLES

Artichokes (Globe),	per doz.	0	2	0	4
Cabbage (York),	per load	5	6	11	0
Carrots,	per bunch	0	1	0	3
Parsley,	do.	0	1	0	1½
Spinach,	per float	0	2	0	5
Rhubarb,	per doz. bunches	0	9	1	4
Peas,	per float	1	2	1	6
Beans,	per sack	1	9	2	6
Turnips,	per bunch	0	1½	0	4
Salads—Cucumbers,	per doz.	2	6	3	6
Tomatoes	per lb.	0	5	0	8
Lettuce,	per doz.	0	2	0	4
Scallions,	per bunch	0	1½	0	2
Herbs—Mint,	per doz. bunches	0	3	0	5
Sage,	do.	0	3	0	7
Thyme,	do.	1	6	3	6

25th July, 1910.

ROBERT HUGH CLARKE.

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Shows.

Royal Horticultural Society's Show.

In a charming position the autumn show was held in the grounds of Lord Treagoe, Stepaside Green, Dublin, kindly lent for the occasion. Taken as a whole I have never seen a better autumn show of plants, flowers, fruits and vegetables all being much better not alone in quantity but in quality when compared with former years. Most new exhibitions competed, and often with success. In the fruit exhibits grapes were certainly better than usual, and largely shown. For white grapes a beautiful pair of Muscats, not large in bunch but with fine, large berries greatly coloured, easily won first prize for Mrs. Le Blond, Lady Bury following with third for two nice bunches of Buckland's Sweetwater. Next year there should be two classes for white grapes, one for Muscats and the other class for any other variety of white grapes.

Black Hambro were well shown, large in bunch, with berries well coloured, Lord O'Neill, T. K. Ludlow, and Lady Bury winning in order named.

For black grapes, any other variety, Lady Bury was first prize winner, and Mrs. Le Blond second, both showing Appley Towers, a grape scarcely enough grown. It has very large berries, which colour a fine black, with a heavy bloom, bunches medium to large, and does well in a coolinery, the first prize bunches being very large, but both lots, in my opinion, wanted a few weeks before being fit for table. Madresfield Court grape was shown by a couple of exhibitors, and should have been placed higher.

Peaches were a good class, the fruit being large and generally well coloured, Sir E. C. Cochrane and Lady Bury being first and second for well-finished dishes. A few good lots were passed over by the judges, not being ripe. Nectarines were fair, a good dish of pineapple being first for the Marquis of Ormonde, T. K. Ludlow second with Eluge, and R. H. Stubber third. Melons were a large class, but generally of poor flavour, though good in size and appearance. Mrs. Redmond, Lord O'Neill, Lady Bury and Ernest Bewley were prize winners.

Apples were very fine in such a year as the present sunless one, being large of size and the eating varieties of grand colour, Beauty of Bath and Irish Peach especially so. The dish of Irish Peach from Fitz W. A. Scott that won first prize was the best dish of this variety I have seen for some years. Ernest Bewley had a grand dish of Charles Ross in the any other variety dessert, not too large, but of beautiful colour, from pot-grown tree, I should say, as the fruit was perfectly ripe. In the collection of eight varieties, four early cooking and four early dessert, the best exhibit was disqualified for having mid-season and late cooking sorts, a warning to exhibitors another year. R. White, Gowran, Fitz W. A. Scott, Lady Bury, E. Bewley, Mrs. Perrin, and Lord Plunket were prize-winners.

Pears were a small class, E. Bewley winning with fine fruit again, probably grown under glass. Plums and small fruits were largely shown and of good quality. Lord O'Neill, Blacker Douglas, Mrs. Redmond, Miss J. M. Field, Lady Bury, Mrs. Perrin, and Capt. L. Riad being first prize-winners.

Tomatoes were a grand class, Sir R. Levinge with Desideratum 1st, and Lady Bury with Mackey's Market Favourite 2nd, two lovely dishes, not large but

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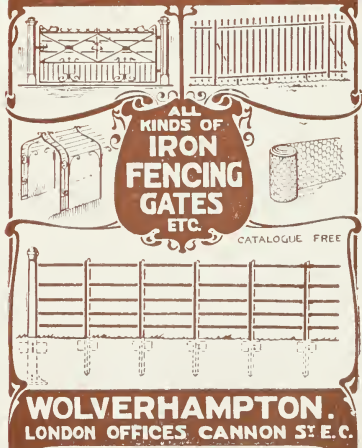
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perfect specimens. Vegetables were largely shown and generally of good quality, the stands being staged for two or three. S. J. Brown, Naas, well won first prize. N. H. Reahy, second prize, and Sir R. Levinge, M. P., third, for Cabbage. They used very high-class manure and manure. Major Harry, Fermont, Clane, was first in the small collection of six kinds. Dr. O'Donnell Browne, who showed the well-sprayed, strong, green, white, while Mrs. Todd, Shangnagh, who had a very good exhibit, and would have been placed second, was also disqualified for not having the stated number of each kind of vegetable as given in the schedule.

Seven peas were largely shown, but with a few exceptions were badly spotted, the cleanest peas being probably sown by Miss Osborne, Drogheda, who won in the class for twelve varieties, and in many of the single bunch classes. Edward Cowdy, Loughall, had the finest peas in the show, and beat Lord Dunleath, who was a good second for the eighteen-bunch champion class and nine bunches distinct for Sir John Nutting, Cap. Mr. Cowdy's bunches of Edna Unwin, Earl Spencer, Martin Beaver, George Stark, Audrey Crier, The King, John Ingram, Fiske Herbert, and Mrs. C. W. Brennan were grand. Lord Dunleath had fine bunches of Marjorie Willis, grand, Frank Dolby, Mrs. Harcourt Sykes, and J. W. Hutchins. Miss Osborne's neat bunches being Marjorie Lynzee, Constance Oliver, George Stark, and Mrs. H. Sykes.

Carnations in the two competitive classes were only fair, Mrs. Hely Hutchinson and H. A. Smallman winning in each class, Sir Lancelot, Bantsee, Clio, Sugarstick, and Mandalay being the best varieties staged.

Dahlias were grandly shown, and seldom have better flowers been seen in Dublin than in the cup class for twenty-four blooms, those staged by R. H. Stubber, Moyne, and W. Ross, Dalkey, being superb, winning in order named, Ruby, Grimstead (pink), Ella Cromer (pink), Mrs. E. Mawley and Glory of Wilts (yellow), F. Streadwell (white), Harbour Light (orange), Nelson, C. H. Curtis, and Dreadnought were about the best dahlias staged.

Begonias were large and generally clean, R. H. Stubber, T. F. Crozier, and R. J. Maunsell winning with good flowers of the following:—Queen Alexandra, Princess Mary, Duke of Fife, Miss Vauance, Avalanche, Mrs. W. D. Ansley, Mrs. J. A. Rossiter, &c.

Roses were good considering the weather, C. Douglas winning for twenty-four blooms, and Dr. O'Donnell Browne for twelve Hybrid Teas; R. J. Maunsell, T. F. Crozier, and F. Thorpe also winning prizes. Dean Hole, Frau Karl Druschki, Hugh Dickson, Mdme. Melanie Soupert; W. E. Lippitt, Gladys Harkness, Caroline Testout, The Lyon, and Lady Ashtown being good.

Non-competitive exhibits never were better, and added much to the beauty and attractiveness of the show. S. A. Jones for a grand lot of gladioli and a few sweet peas and W. Drummond & Son for a beautiful exhibit of hardy flowers in great variety were awarded gold medals; while Charles Ramsay and W. Watson were awarded silver medals for fine exhibits very well arranged.

Col. Poe (gardener, Mr. Cook) put up a nice exhibit of twenty dishes of potatoes, Abundance, Windsor Castle, Superdive, and New Success being very good; awarded a silver medal. A bronze medal was awarded to an exhibit staged by the Vacant Land Cultivation Society of vegetables grown by workmen on plots at North Strand and Pigeon House Road. Mr. Watson, Chemist, South St. George's Street, had an exhibit of useful sundries for garden and farm, and well deserved inspection.

In the rose classes for nurserymen Hugh Dickson, Belfast, won for seventy-two blooms, and A. Dickson & Sons for twelve new roses and twenty-four Tea roses. For table of roses Hugh Dickson beat A. Dickson & Sons.

W. T.

Kingstown Flower Show.

The Kingstown Horticultural Society's second annual show was held on Wednesday, 17th August, in the People's Park, which is an ideal ground for such an event. The weather on that day was faultless, although the heavy rains just previous left their mark on many of the exhibits, and were responsible for a blank here and there on the staging. Some of the trade exhibits, too, had to be omitted on that account.

The Earl of Longford, president of the society, visited the show, and was greatly pleased with the exhibits. The attendance during the afternoon is estimated at well over 2,000.

The show was even an advance on the inaugural event of last year, 600 entries being made as against 430.

In the flower section carnations showed excellent quality, and the competition was close in many classes. The herbaceous and hardy cut flowers were good all round, a vase of campanulas being pronounced by the judges "the best they had seen"; the sweet pea, although injured by the weather, was good; the cactus dahlias exhibited proved very attractive. In the fruit and vegetable sections a largely increased entry was made, and the exhibits were generally of good quality. Demonstrations in bee-keeping were given by the Hon. Sec. of the Irish Beekeepers' Association.

The success attending each of the Kingstown shows has been phenomenal, viewed from the social, commercial, or exhibitors' standpoint. This year's undertaking was patronised by a great many of the well-known exhibitors in the county, and if it continues improving at its present rate the Kingstown show will undoubtedly become, in a short time, the premier one of its kind in Ireland.

Co. Clare Horticultural Society's Show.

THE above was held on August 10th in the commodious Artillery Barracks, Ennis, and seemed to be favoured with almost everything that could be desired—grand weather, very large entries and exhibits of the highest quality, and a large and fashionable attendance, but a notable absence of the inhabitants of the town. The most striking feature was the excellence of the exhibits, which was specially notable in the cottagers' and amateurs' section, and the collections of vegetables staged in the competition for Jones's Challenge Cup, which was again won by the Rt. Hon. Lord Inchiquin (gardener, Mr. J. Carter), who thus becomes possessor of this coveted trophy.

The winners of the "Toogood" Challenge Shields for the highest number of points obtained at the show were Major S. C. Hickman, D.L.—total, 64 points; Rev. R. Scott, 44 points (Parchment Certificate of Excellence in Horticulture); M. Keane, Esq., D.L., 42 points, and Rt. Hon. Lord Inchiquin, 40 points. The remaining chief prize winners—Rt. Hon. Lady Dunaleigh, Lady Barrington, W. F. Crowe, Esq., and Mrs. R. Maunsell, and in the cottagers' class Messrs. C. Doyle, Morton and Acton. The winners of the principal special prizes were as follows:—Sydenham's, Limited, for nine varieties of sweet peas, Major Hickman; Eckford's, for nine varieties of sweet peas, Lady Barrington; and Jones's, for twelve varieties of sweet peas, Mrs. R. Maunsell. In the class for twelve vases of hardy perennials, in which the prizes are presented by Messrs. Reamsbottom & Co., there was very keen competition, Lady Barrington providing the winning exhibit. A magnificent exhibit of double begonias was staged by C. Croker, Esq., D.L., of Limerick, who also beat the society's hitherto unbeaten champion, the Rev. R. Scott, in the class for six blooms; rarely are such magnificent blooms staged in a provincial show.

The nurserymen's exhibits, as usual, were an important feature of the show, splendid stands being put

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through the paper, but this in no way detracts from its value as a capital guide to growers. It is full and informational.

RITCHIE'S BULBS, TREES AND PLANTS.—A good and well illustrated catalogue of this progressive Belfast firm. It contains all the likely requirements of a garden, and our northern readers, at all events, should consult its attractive pages.

DAFFODILS AND OTHER BULBS is the title of a little book issued by Miss F. W. Currey, the well-known specialist, of the Warren Gardens, Lismore, Co. Waterford. When we remember that Miss Currey's general collection of daffodils at the Midland Daffodil Society's great show at Birmingham in April of this year secured the highest trade award—an only gold medal—we may feel the utmost confidence as to the quality of bulbs sent out by such an expert in daffodil culture. The list contains many new and rare daffodils, as well as a general list of standard varieties.

Visit to Pennick's Nurseries, Delgany.

PROFESSOR BURBIDGE aptly described these nurseries as an "ideal plant home." This was the universal opinion of expert members of the Dublin Seed and Nurserymen's Association, who made a special excursion on Saturday, August 6th, 1910, to survey the interesting plant collection. It possesses numerous unique examples of rare exotics that botanic gardens should be eager to possess.

Ten acres have been added for fruit culture, and the rows of luxuriant apples, pears and other fruits, grown regular and uniform, were much admired. The varieties that the Department for Agriculture recommend are thriving in vast quantity.

The *Ceratonia silqua*—this plant stands ten feet high, and is known as the "Locust Tree," its habitat being the Mediterranean.

Very attractive is the *Halesia tetraptera*, the "Silver Bell" or Snowdrop Tree. Likewise the *Drimys Winteri*, standing thirty feet high in front of a cedar of Lebanon, was inspected with much interest.

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The Dublin Wholesale Markets.

DURING the past month the markets have been in a very congested condition; this was probably due to the large amount of produce available for market purposes in August. The Horse Show being on induced many home and foreign growers to send extra large supplies; consequently prices went down, though a clearing was effected in most cases.

Up to the present fruit continues to arrive in large consignments. The following varieties of cooking apples predominate:—viz., Early Victoria, Lord Grosvenor, Stirling Castle, and Duchess Oldenburgh. Dessert apples, like Beauty of Bath, Gladstone, and Irish Peach, are plentiful, some of the best arriving from Kent. The heavy winds that occurred on the 26th did great damage to orchards, consequently the markets are crowded with "wind-falls." Small fruits are scarce, and anybody able to keep back gooseberries and currants to the end of the month would find it

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profitable. Peas and pump are well to the fore, some fine specimens of *Largemans* peas realising fine prices (Irish Horse Show week). Melons and cucumbers are equal to demand. Grapes are very good and are bringing fine prices. Peaches are a good crop, but the packing to many cases is faulty, and they lose in value through arriving in the market in a damaged condition. Foreign fruit in large quantities.

Flowers are not so plentiful as last month, the recent heavy rain having done much damage to the tender and more beautiful kinds. Lilies, carnations, sweet peas, asters, chrysanthemums, greenery and hardy herbaceous stuff predominating. Roses are scarce and damaged.

Vegetables are plentiful and very good, the recent rains producing a fine growth; cabbage has improved greatly in price, while other green and root crops remain low. Good peas are scarce and what arrive are more suitable for seed than eating. Large quantities of tomatoes continue to arrive, first-class in quality and very cheap. Rhubarb continues to arrive in small lots notwithstanding the lateness of the season, and still pains growers in the vicinity of the city to market it.

The following is the list of prices for the month:—

FRUIT		From		To	
		s.	d.	s.	d.
Grapes, black,	per lb.	1	0	1	8
Do. Muscats,	do.	1	0	2	2
Peaches,	per doz.	3	0	8	0
Plums,	per $\frac{1}{2}$ bushel	4	0	6	6
Gooseberries,	do.	2	6	4	0
Pears,	per doz.	0	6	1	8
Melons,	each	0	6	2	6
Apples,	per doz.	0	8	1	2
Do. best dessert,	do.	1	0	3	0
Do. best cooking,	do.	1	0	2	0
Figs, good,	do.	1	6	3	0

FLOWERS

		From	To
		s.	d.
Carnations,	per bunch	0	3
Chrysanthemums,	do.	0	6
Sweet Peas,	per doz. bunches	0	9
Asters,	do. do.	0	4
Lilies (White),	do. spikes	1	0
Roses,	per bunch	0	4
Antirrhinums,	do.	0	4
Pelargoniums,	doz. blooms	0	10

VEGETABLES

Artichokes,	per doz.	0	2	0	4
Brussels Sprouts,	per float	1	0	2	6
Beet,	per bunch	0	2	0	5
Beans (Broad),	per float	0	4	0	6
Do. (Kidney),	do.	1	6	2	0
Cabbage (York),	per load	5	6	14	0
Cauliflowers,	per flasket	3	0	4	6
Cucumbers,	per doz.	1	6	2	4
Parsnips,	do. bunches	0	4	0	9
Carrots,	do. do.	0	5	0	9
Spinach,	per float	0	4	0	6
Mint,	per doz. bunches	0	3	0	5
Sage,	do. do.	0	9	1	6
Thyme (Large),	do. do.	1	0	2	6
Marrows,	per doz.	0	9	1	6
Turnips (Large),	per bunch	0	4	0	6
Parsley,	per float	0	4	0	6
Tomatoes	per lb.	0	3	0	5
Lettuce,	per doz.	0	1	0	3
Rhubarb,	per doz. bunches	0	8	0	11

29th August, 1910.

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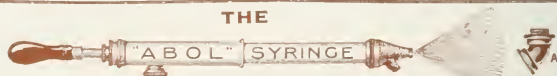
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BRENTWOOD

A Trip through Kerry.

TAKING advantage of a fall in the rainy season I took the opportunity of taking a long drive through the county of Kerry and also to pay a visit to the principal gardens. Making a start here at Ballybrennan and passing through Arletty, Colles, and beside the dangerous road of the abbey, whose grounds are well kept, through Tralee and on to Killarney, I made the first call at Glenhead, Colles, which takes its name from the river which flows beneath its glen. Killarney House gardens come next on the list. The grounds of this world-famed demesne were, looking their best, the beautiful scroll beds and the cypress and yew hedges, also the rare plants planted through the grounds, make this place very interesting. A visit was also paid to the large and well-looked after gardens, where the crops were good—a young orchard of apples bearing a good crop of fruit in the year of scarcity for the apple crop. A fine crop of grapes and peaches were seen under glass. The next object was Gaiety, the pretty and well kept residence of the Knight of Kerry, situated on the shores of a volcanic island. Hydrangeas are one of the chief features here, and can be seen a considerable distance away. Mr. Haden, the gardener, informed me that all the flowers were pink last year; the majority in the present instance were blue flowered. Several bushes of the beautiful and sweet-scented Lily of the Valley tree *Clivia arborea* looked well, and were then coming

into flower. Some, I should say, were from fifteen to twenty feet high; the shrub thrives exceptionally well here. Bamboos are largely grown, and do exceptionally well also; most of the best varieties are cultivated. Passing on again through Waterville and Sneem, and arriving at Parknasilla, I lodged at Derryquin Castle. Here a great improvement has been made. The castle has been considerably added to recently, and a pretty little rockery has been constructed in the garden proper. Some glass has been erected and more is contemplated later on. The house now erected is one of Skinner Board's wire tension houses. I was greatly surprised at the strength of the structure; it seems well fitted to stand the storms we get along the coast. Mr. Heard's pretty place beside Derryquin was next visited. The proprietor has planted a fine lot of tropical vegetation here. Bamboos in quantity. Several varieties of Eucalyptus, palms and ferns, and a host of tender shrubs too numerous to mention separately. Passing from here through the fine demesne of Dromore on to Dromquinna, gardening is gone in for in an all round style; the grounds are very tastefully laid out. This pretty place is almost at the base of the Kenmare river, and runs down to the waters edge; in fact nearly all the places mentioned are at the sea-side so to speak—some on the Kenmare river, some on the ocean. I noticed thousands of young shrubs in nursery beds at the above place for woodland planting. Rhododendrons, Escallonnas, Olearias, &c. The grounds in front of the mansion are especially

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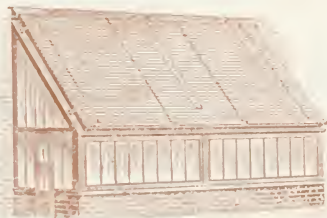
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This Preparation has been most successfully tested under special
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PRICES: Pints, 1-; Quarts, 2-; 1 Gallon, 3 6; 1 Ca'l on, 6 -
3 Gallons, 17 -; 5 Gallons, 27 6; 10 Gallons, 54 -

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ITS ADVANTAGES ARE—

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It is most successfully used by Orange and
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FUMIGATOR . .**

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INTRODUCED 1885.

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infesting vegetation under glass is now manufactured in a more
simple and reliable form. The small candle, which will be found
packed with each cone, has only to be lighted, and placed on the
ground in the centre of the Cone Frame, to produce immediate
results. Nothing on the market can equal it for efficacy and
cheapness.

Cone No. 3, for a well-secured house of cubic 2,000 to 2,500 feet,
price 1/- ea. h. Cone No. 2, for a well-secured house of cubic 1,000
to 1,200 feet, price, 8d. each. Cone No. 1, Carbon, for frames
cubic 100 feet, price 6d. each. Full directions accompany each Cone.

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fine, rounded borders of *Leucodermis* plants being planted in a background of fine argemone shrubs. The open garden in the centre opening up some pretty views to the river. Dromedary close beside here, is a pretty little place, an exquisite natural one. Key being a course of development. Lonsdowne Lodge, occupied by Lord Lonsdowne's agent, contains a pretty rockery, and Sheep Falls, the residence in Ireland of Lord Kerry, is also worth a visit. Rock plants are the principal features here, and Lady Kerry takes a keen interest in this class of plants. Passing still further afield on the other side of the river I came to Derreen, where Lord Lonsdowne rests from the strenuous cares of Parliamentary life. I might say that here the cream of tropical planting in this genial climate is done. Bamboos in several varieties flourish here to perfection, and the seedlings come up and thrive all over the place. His lordship has now a fine collection of rhododendrons, Himalayan and other varieties, and, like the bamboos, they seem at home at Derreen. Some fine trees of *Eucalyptus globulus* and various varieties of the rarer conifers were also noticed. Leaving here, and passing through Kenmare to Glengriff and back and to Killybeg, I finished up an interesting tour at Aghadee House gardens. The special feature here was a fine crop of plums on fan-trained wall trees (all home grafted).

Any one wishing to pass an interesting holiday could not do better than take a tour round the coast as I did on this occasion, the scenery at several places on the coast being magnificent. D. C., Ballyheigue.

Royal Horticultural Society of Ireland.

THE monthly meeting of the council was held at 5 Moleworth Street, September 6, the following members being present, viz.—G. M. Ross, M.A.; J. Wyse-Henderson, Robert Anderson, James J. McDonough, D. L. Ramsay, J.P.; E. D'Olier, F. W. Moore, Ernest Bewley, T.C., with H. P. Goodbody presiding. The balance sheet of the autumn show was discussed and approved, and accounts in connection with it, including the prize list, ordered to be paid. (Prize cheques were posted on the 16th.) It was generally considered that altogether the autumn show was a decided advance over later years, the total number of visitors being 1,097. A unanimous vote of thanks was accorded to Mr. S. A. Jones, F.R.H.S., Forest Lodge Nurseries, Gowran, Kilkenny, for the gift of 200 yards of cloth draping for the society's staging, also to Messrs. Charles Ramsay and Sons for a collection of choice dahlia blooms from the Royal Nurseries, Ballsbridge. Thirteen new members were elected. The council are gratified at the steady accession of new members shown through the year, and the secretary would be glad to have the names of those contemplating joining the society in order to include same in members' list for coming year. The schedule committee meeting on the 16th revised the programme for the next spring show, adding several new classes, viz.:—A class for 8 ft. by 4 ft. tables of Alpines arranged in a natural manner, no cut flowers being allowed, for which the Tully Nursery present a

—8 guinea challenge cup and cash prizes of three, two and one guineas, respectively, the money prizes to go to the gardener; a class for three bowls of narcissi, distinct, grown in fibre; a collection of perpetual flowering carnation blooms shown in vases; an additional class for daisies in pots, not to exceed nine inches, and a class for brides' bouquets open to the trade, first prize of £2 presented by Ernest Bewley, Esq., T.C. A new class has also been added to the narcissi section consisting of six vases of polyanthus, or *Paez* narcissi, three trusses to a vase. Advance copies of the spring show schedule will be sent to exhibitors as soon as confirmed by the council.

Notes.

MR. TODMAN writes in reference to his advertisement that he does "not print a list, but my fruit stock comprises something like 30 acres entirely devoted to the cultivation of fruit trees, especially grown for market garden work, where each variety is required in quantity to plant by the acre, of one sort if desired."

MR. KNOWLDIN writes: "We have paid a hurried visit to Straffan—dear old Straffan in Kildare—when in the quiet of a perfect autumn day, mid scenes that are fairest for we never saw Straffan looking lovelier. Mrs. Bedford was borne from her pleasant home to her rest in Straffan's churchyard. It was a large gathering which met to pay the last token of respect, and show sympathy with our old friend and his family in their sad bereavement; and well we recollected as his dear old mother was carried out to rest beside him in 'Peace, perfect peace,' hqw, eighteen years before, her first born son, who had all but reached man's estate, was taken too."

THE GARDENERS AND POULTRY KEEPERS' GUIDE.—We are requested to state in reference to Messrs. Cooper's advertisement in this issue that the catalogue therein offered to be sent to readers of this paper cannot be despatched at once, as the large first edition printed is now entirely exhausted. A new edition however, is being rapidly printed off and will be forwarded to all applicants immediately it is ready.

A NOTE of warning has been sounded to arboriculturists at the International Road Congress recently held at Brussels. It seems that in several places on the Continent roadside trees and shrubs have suffered from the effects of dust raised by passing motors over tarred roads. The minute particles of tar, it is said, injure the foliage by producing brown marks owing to their "caustic" action upon the living tissues.

THE pleasure which is derived from the successful cultivation of miniature gems and of dwarf Alpine plants is now fully recognised, and rock-gardens have become a popular feature in gardening to-day. In a properly constructed rock-garden many little plants which refuse to grow and live under the ordinary conditions of a herbaceous border, and which resent the aggressive attentions of their more robust neighbours, generally demonstrating their resentment by dying, can be cultivated and kept in health and vigour for many years, protected by stones, sheltered from drying winds and

from clouds or sunlight, during the winter, according to local requirements. They are, owing to their raised position, better and suited to a warmer more equable climate, to the comfort of the atmosphere and cultivation than would be possible if they were grown on the flat.—*F. W. Meehan.*

SOIL CULTIVATION.—The general object of all soil cultivation is to make favourable conditions for the growth of desirable plants. In relation to the soil, proper ventilation of moisture, heat and air must be present. We cultivate the soil for the following purposes: (1) To open up the soil. Plant roots must be able to push their way through the soil and get food from a large area for the best development. (2) To conserve moisture. This is possibly the most important effect of cultivation in Montana. Soil moisture, of use in plant growth, exists around the soil particles and moves from the wet to the dry place. To prevent unnecessary evaporation and loss we must cultivate as early as possible in the spring, as soon as possible after rain immediately behind the plough in spring ploughing, and as soon as the soil is dry enough after irrigation. (3) To raise the soil temperature. The warmer the soil at planting time in the spring the more rapid the germination and growth. By stopping evaporation early spring cultivation raises the soil temperature. To admit air. Plant roots and soil organisms require air for best development and activity. To destroy weeds. Weeds are soil robbers. Cultivate them out when they are small and thus prevent their seeding.—*Better Fruit.*

Catalogues.

MCKENZIE'S BULB CATALOGUE, issued from 222 Great Brunswick Street, Dublin, is a convenient little book with descriptive lists of all the better known flowering bulbs, including those for early forcing.

PHILLIPS AND IRELAND send us a neat little catalogue of Alpine plants. It gives an introductory essay on how to make, plant, and keep up a rockery, which ought to prove interesting reading to many amateurs.

BELB AND NURSERY CATALOGUE, issued by W. Tait and Co., Chapel Street, Dublin. This is a well illustrated descriptive list of plants of interest to gardeners. Cultural directions are given for the guidance of amateurs. As the title indicates, it includes fruit trees, roses, flowering and evergreen shrubs and climbers.

"HAWKMARK" ROSE CATALOGUE, issued by Alex. Dickson and Sons, Ltd., is a handsome, large-paged book, clearly printed in green ink in large type, and illustrated with full page plates of new roses reproduced in colour. It is indispensable to rosarians, while all gardeners should secure a copy and keep it for reference.

WATSON'S CARNATIONS (Clontarf, Dublin) is a catalogue that ought to be secured by all growers of these plants. It is full of good things. We refer readers to an article in the present issue on the cultivation of border carnations, written specially at our request

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by a member of this enterprising firm who has specialised in the cultivation of these delightful garden plants.

NURSERY SEED AND PLANT CATALOGUE of the Paulbeg Nurseries, Shillelagh, Co. Wicklow. Mr. W. Hammond's autumn list of fruit trees, shrubs, and other ordinary nursery subjects will be found useful by farmers and amateur gardeners. There are notes on planting and training trees and bushes, and hints on sowing certain vegetables and flower seeds. Mr. Hammond also deals in farm seeds, poultry feeding stuffs, and farm and garden implements.

A Market for Irish Fruit.

JUST before going to press we had a visit from Mr. Ernest Hammond of the firm of George Hammond, Ltd., the extensive fruit farmers of Brentford, Essex. The Hammond Company have been their own salesmen in Spitalfields Market, London, for many years. They are now prepared to sell for Irish growers on commission. Our reason for mentioning the matter here is that Mr. Hammond as a fruit-grower has been personally known to us for very many years and we are desirous of assuring such of our readers as require the services of a London salesman that they may place the fullest confidence in Mr. Hammond's integrity and fair dealing. The Messrs. Hammond cultivate upwards of one hundred acres of fruit, and are recognised as being

one of the best firms of fruit-growers in England. We have often consulted them on points of culture; and indeed an article from the pen of one of the firm on the pruning of fruit trees for market purposes will appear shortly in the pages of IRISH GARDENING.

The Dublin Wholesale Markets.

SEPTEMBER has been one of the most satisfactory months of the year from a market man's point of view, as both buyer and seller were satisfied—the former with the good quality of the stuff, and the latter with the good prices obtained.

Fruit continues to be marketed in large quantities, and in truth it must be said there is a decided improvement in quality and packing. Pears, both home and foreign, have up to the present been exceptionally good, choice home lots selling well. Irish apples have maintained a high standard throughout the month; so well coloured were many of the lots that it led one to think that if they were Irish the sun did not do justice to the neighbourhood of Dublin. Plums, though in large quantities, are not so cheap as last year. Damsons, considering the heavy crop, are selling well. Peaches and cherries are evidently over for the season.

Flowers are plentiful, the larger proportion of them being soft stuff, like dahlias, stocks, asters, &c., and as

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All Fruit Trees should be treated
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MOSS, LICHEN, AND GREEN SLIME

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MOTHS, APHIDES, RED SPIDER, &c.

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1 lb., 2 lbs., 4 lbs., and 10 lbs. each

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two classes of flowers (various kinds) for long, when cut they keep well. Flowers of a soft colour, like chrysanthemums, ranunculus, gladioli, pansies, mignonette, &c., are much sought in preference. Violets are coming into use in small quantities.

Vegetables are very plentiful, especially turnips, cabbages, broad beans, and marrow. Lettuce, cauliflower, and cabbage are selling well.

Here are some quantities:

The following is the list of prices for the month:

DOZ.	PER DOZ.	PER DOZ.	PER DOZ.
Apples, Lady's Delight,	per doz.	1 0	1 8
Do. Stirling Castle,	do.	1 0	1 10
Do. Dumore,	do.	0 6	1 0
Do. Greenheart,	per barrel	10 0	15 0
Do. Worcester Pearmain,	per doz.	0 9	1 2
Pears, Lassington,	do.	0 6	1 8
Do. cooking,	do.	0 4	1 0
Grapes, Alicante,	per lb.	0 8	1 0
Do. Hamburg,	do.	0 6	0 10
Do. Muscats,	do.	0 10	1 4
Medians,	each	1 0	2 0
Pears,	per float	0 0	2 0
Dracopis,	per 1/2 bushel	3 0	4 0

FLOWERS

Dahlias,	per bunch	0 6	0 8
Gladioli,	per doz.	1 0	2 0
Montbretias,	per bunch	0 6	0 9
Asters (double),	do.	0 3	0 6
Lilies (White),	per doz.	1 4	2 0
Chrysanthemums,	per bunch	1 6	2 6

Violets,	per doz. bunches	1 0	1 4
Asparagus,	per bundle	0 8	1 0
Spinach,	do.	0 6	0 10

VEGETABLES

Brussels Sprouts,	per float	1 4	2 6
Beet,	per doz.	0 2	0 4
Cauliflowers,	do.	0 6	1 1
Cabbage,	per load	10 0	17 0
Celery,	per doz.	0 6	1 0
Carrots,	per doz. bunches	0 7	0 11
Lettuce,	per doz.	0 3	0 6
Leeks,	do.	0 10	1 2
Marrow,	do.	0 10	2 6
Parsnips,	do. bunches	0 7	1 0
Parsley,	per float	0 3	0 7
Tomatoes,	per lb.	0 4	0 5
Cucumbers,	per doz.	1 6	2 6
Rhubarb,	per doz. bunches	1 0	1 4
Scallions,	per bunch	0 3	0 5
Radishes,	do.	0 1 1/2	0 3
Onions,	per bag	3 0	3 0
Mint,	per doz. bunches	0 5	0 7
Sage,	do. do.	1 6	3 0
Thyme,	do. do.	0 3	0 6
Turnips (Garden),	per float	0 2	0 4
Do. (Swede),	per cwt.	0 11	1 2
Beans (Broad),	per float	0 6	0 9
Do. (Kidney),	do.	2 0	2 10
Spinach,	do.	0 5	0 8

27th Sept., 1910.

ROBERT HUGH CLARKE.

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Polished Plate for Shop Windows.

Horticultural Glass at Lowest Rates.

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HOYTE'S WEED KILLER.

Strongly Recommended for the Destruction of Weeds, &c.

Price, 2s. per gallon; 5 gallons, 1s. 6d. per gallon; 10 gallons, 1s. 3d. per gallon; Original 40-gallon casks, 1s. per gallon.

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Chil Treas. sizes up to size 2 only 3 6. As Darby and gives Rheumatism and Sciatica, these Fine Quality

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Miscellaneous Section

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Royal Horticultural Society of Ireland

THE monthly meeting of the council was held at the society's offices, 5, Molesworth Street, Dublin, October 27th. Members present—Reg. T. Harris, F.R.S.; F. W. Moore, M.A.; James J. McDonough, D. L.; Ramsay, J.P.; G. Watson, W. I. Murellan, Robert Anderson, W. F. Gunn, J. Wyllie Henderson, G. M. Ross, M.A.; Rev. Canon Hayes, M.A.—H. P. Goodbody presiding. A letter was read from Sir Arthur Higgin, Balmoral Castle, to Mr. F. W. Moore, *hon. secretary*, stating he was commanded to say that his Majesty the King had much pleasure in consenting to become a patron of the Royal Horticultural Society of Ireland. An interesting communication was received from Mr. Wm. Ed. Sands, F.R.H.S., potato specialist, Hathersleigh, Co. Down, respecting his method of taking two crops of potatoes off the same plot of ground in the year, his collection of potatoes including the catch crop produce, which had recently been exhibited at the Royal Horticultural Society's meeting, London, and at the National Vegetable Society's great show, having been awarded a silver medal by each. The council expressed the hope that Mr. Sands would be able to send an exhibit to one of the society's shows to be held next year. A remarkable feature of Mr. Sands' method appears to be the superiority of the second, or catch crop, tubers for seed purposes, last year's comparative

trials at the Harper Adams Agricultural College including in its report. The second crop seed being miniature tubers, in each case, produced a heavier crop. The schedule of the spring show for 1911, as approved by the council, has been posted to exhibitors; this includes several new classes, and can be had on application to the secretary. The best thanks of the council were accorded to Messrs. Chas. Ramsay & Sons, The Royal Nurseries, Ballbridge, for a collection of *Cactus dahlias*, including some of the best of the new varieties, and also to Messrs. Wm. Watson & Sons, Ltd., for thirty varieties of out-door chrysanthemums, bright, clean sprays from plants naturally grown without disbudding. Six new members were elected.

National Hardy Plant Society.

A meeting of the Provisional Committee of the recently formed National Hardy Plant Society was held at the Royal Horticultural Society's Hall, Vincent Square, on Thursday, October 13th. Mr. Macself in the chair.

Rules and by-laws were adopted subject to approval by a general meeting of the society, which will be held on Thursday, November 3rd, at 3 p.m., at the Hotel Windsor, Victoria Street, Westminster, for this purpose, and for the election of officers and council for the ensuing year. Members and any one interested in hardy plants desirous of joining are cordially invited. The secretary is Mr. Frank Bouskell, Market Bosworth, Nuneaton.

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Catalogues.

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POWER'S PLANTERS' GUIDE.—Here again there is a great advance on former catalogues issued from this well-known Waterford nursery.

"First look at my garden and know your power
For nothing's hidden ripe and full
Of blossoms and fruit for trees & flower
In place to suit, in season there will!"

These lines from Whittier appear on the strikingly handsome 164th page of a really interesting book. The first section deals with forest trees, and useful information is given under each kind. Then there is a whole page devoted to the subject of trees in relation to different kinds of soil, and again another page to the planting and care of hedges. Fruit trees are included in the next section, and roses

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THE advent of autumn always causes a rush of rats and mice from their summer quarters in the open into the near neighbourhood of dwelling houses, farm-yards, barns, &c., and before they get settled down to increase and multiply (as they do in the winter months) an attempt should be made to drive them out and destroy them. The proprietors of "Liverpool" Virus are at present distributing an interesting little booklet giving letters from estate agents, farmers, millowners, householders, shipowners, and others who have voluntarily written in praise of the Virus as a destroyer of both rats and mice. The householder who uses half-a-crown's worth and the estate agent who uses ten pounds' worth to spread over hundreds of acres are alike laudatory in their reports. The following is one of these letters (it comes from the agent for a large estate which was overrun with rats):—"June 13th, 1910. I received a letter from the steward this morning in which he says—'I wish to let you know the result of the Virus. It is most marvellous. I can scarcely see a rat, and all the money that was laid out on strychnine was just lost, as I could never see any result from it.'" Another letter says:—"I am pleased to inform you that the 'Liverpool' Virus has thoroughly eradicated every mouse in the place." Fresh supplies of "Liverpool" Virus can always be had in Ireland from Mr. D. M. Watson, Agricultural Chemist, 61 South Great George's Street, Dublin. The "Liverpool" Virus for Rats is now put up quite ready for use in tins at 2s. 6d. and 6s. each (postage 3d. and 4d. extra), or in large tubes (which require preparation) at 8s. each, postage 3d. extra. The special Mouse Virus is 1s. 6d. per tin, postage 2d. extra. For large surfaces, or when rats or mice are very numerous, the 6s. tins or 8s. tubes should be used; they are much cheaper in proportion than the smaller ones.

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We are informed that at the Hexham Great Fruit Congress just held, the Four Oaks undentable spraying syringes were awarded a gold medal, the only gold medal ever awarded to a syringe. They also were awarded another gold medal for their spraying machines and two silver medals, constituting a world's record!

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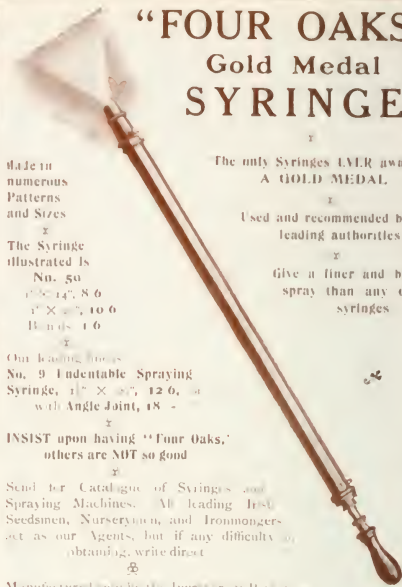
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The Dublin Wholesale Markets.

THE past month found a depressing supply of produce in the markets, and a somewhat lower range of prices. This state of affairs is not due to bad trade, but is characteristic of the markets at this period of the year.

Fruit, though in Irish quantities, is not up to the high standard of the past three months. Apples are selling better in spite of the fact that large arrivals from France are now selling at the markets. Undoubtedly home apple-growers have a very serious competition to contend against. Pears are almost all from foreign sources. Peaches of inferior quality continue to be marketed.

Flowers were plentiful during the early part of the month, but have now grown scarce. Chrysanthemums were arriving in large quantities, and will, I am sure, continue to monopolise the markets for some time. Forced stuff is making its appearance, the 'Lily of the Valley' being especially good. Violets (both home and foreign) sold quickly at some what cheaply. Greenery is plentiful, and acorn-trees and carnations are to be seen.

Vegetables, both root and green, were plentiful, and so prices for almost all kinds were low; however, Brussels sprouts, kidney beans and artichokes sold well. Cabbages were in enormous quantities, and the prices obtained would hardly pay carriage to market. Pot herbs and tomatoes are rising in price.

The following is the list of prices for the month:—

FRUIT		From	To
		s. d.	s. d.
Apples, Lord Derby,	per bushel	3 8	4 6
Do. Warner's King,	per barrel	15 0	16 6
Do. King of the Pippins,	per doz.	0 9	1 1
Do. Mixed (cooking),	per float	1 6	2 0
Do. do. (dessert),	per box	0 9	1 2
Pears,	per doz.	2 0	3 0
Peaches (poor),	do.	0 6	1 6

FLOWER		per lb.	per doz.
Grapes, Alicante,	per lb.	0 7	4 11
Do. Gros Colman,	do	0 10	1 2
Do. White (foreign),	per barrel	1 10	6 0

FLOWER			
Carnations,	per bunch	3 0	3 0
Chrysanthemums,	do.	1 0	1 11
Aurum Lilies,	per doz.	2 6	1 0
Lily of the Valley	per doz. blooms	0 8	0 11
Smilax,	do. sprays	0 10	1 6
Violets,	do. bunches	0 6	1 6

VEGETABLES		per float	per doz.
Artichokes,	per float	0 8	1 2
Brussels Sprouts,	do.	1 10	3 0
Broccoli,	per basket,	1 10	4 0
Beet,	per doz.	0 3	0 7
Cabbages, Best York,	per load	6 0	9 0
Do. 2nd quality,	do.	1 0	6 6
Celery,	per doz.	1 0	1 10
Carrots,	per doz. bunches	0 5	0 10
Leeks,	do.	0 1	0 4
Lettuce,	per doz.	0 2	0 4
Mint,	per doz. bunches	1 0	1 2
Parsley,	per float	0 3	0 7
Parsnips,	per doz. bunches	0 7	0 10
Spinach,	per float	0 3	0 9
Turnips (Garden),	per bunch	0 1	0 3
Do. (Swede),	per cwt.	0 10 1	1 0
Thyme,	per doz. bunches	0 7	0 9
Sage,	do.	2 0	3 0
Cucumbers,	per doz.	1 6	2 6
Tomatoes,	per lb.	0 3	0 6
Marrows,	per doz.	0 8	1 0
Beans (Kidney),	per tray	1 6	2 6
Do. (Broad),	per float	0 8	1 2
Do. (Runner),	do.	0 6	0 8
Peas	per tray	2 0	3 0

27th Oct., 1910.

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Belfast Chrysanthemum Show.

THE Ulster Horticultural Society is to be congratulated on the great success of this annual Show which took place on the 8th and 9th November, in St. George's Market, Belfast. The opening ceremony was performed under most auspicious circumstances by Her Excellency the Countess of Aberdeen. It is no exaggeration to say this show is one of the foremost of its kind in the United Kingdom, is admirably managed, and well patronised by the general public.

The flower which gives to the show its name again occupied a commanding position, and was much admired.

It is true, the chrysanthemum has declined in popularity during recent years, yet without this splendid autumn and winter flower the show would lose a beautiful and most attractive feature. In the Japanese section John Jameson, D.L., Portmarnock, was the chief prize winner. Single varieties showed a distinct advance on previous years. A line group, which was greatly admired, was exhibited by James Bradley, Haypark House, Belfast.

The nurserymen's exhibits were very fine, and contributed largely to the success of the show, especially the efforts of Messrs. Hugh Dickson, Belmont and Dundonald Nurseries; Messrs. Alex. Dickson & Sons, Royal Avenue; and Messrs. Frank Smith, High Street, Belfast, all of whom had their exhibits displayed most artistically.

The fruit section may be said to be the chief feature of interest in the show, if not to city visitors it certainly was to country visitors. The exhibits, taken as a whole, reached a high standard of excellence. In a few individual classes the prize fruit may not be so fine as on some previous occasions, still the absence of inferior fruit was very noticeable. It will be noticed that a large

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proportion of the prizes went to the south of Ireland, and the exhibits from the premier fruit-growing county, Armagh, were very few in comparison to the amount of fruit grown. The high colour of the south of Ireland fruit contributed in a great measure to its success. There were, however, some fine fruit on show from County Armagh, and special mention must be made of a collection of apples exhibited by J. A. Brownlee, Blackham, Portadown, and which was recommended by the judges for a special prize. The fruit in this collection was very fine, and bore evidence of good cultural skill on the part of this amateur grower. Fine collections of fruit were shown by Edward Taylor, Grange, Portadown; A. G. Bowers, Piltown, Kilkenny; Robt. A. Jamison, Knock; Jas. Kennedy, Carrick-on-Shure; Lady Fitzgerald, Carrigan; Capt. Annett, Castlemartyr; Earl of Bessborough, Kilkenny; Spottiswood Bowles, Co. Cork; Lady Annally, and John Jameson.

The following is a list of first prize winners in classes for single dishes of apples, viz.:—Cox's Orange Pippin, Lady Palmer, Ribston Pippin (very fine), John H. Bennett, Ballinagurra, Co. Cork; King of Pippins, Lady Fitzgerald, Carrigan; Blenheim Orange, F. W. A. Scott, Newmarket-on-Fergus; Allington Pippin, F. W. A. Scott, Newmarket-on-Fergus; James Grieve (fine), C. Bracken, Enniskillen; Gascoyne's Scarlet, A. G. Bowers, Kilkenny; Chas. Ross (fine), Lady Fitzgerald, Carrigan; Rival, J. A. Brownlee, Portadown; Warner's King, Lady Fitzgerald, Carrigan; Peasegood's Nonsuch, F. W. A. Scott; Bramley Seedling, Lady Annally, Gowran; Lord Derby, S. W. Wright, Moneymore; Lane's Prince Albert, Mrs. Duggan, Piltown; Bismarck, Capt. Annett, Castlemartyr; The Queen, A. G. Bowers, Kilkenny; Lady Henniker, James Eccles, Loughgall; Royal Jubilee, J. A. Brownlee,

Portadown; Chelmsford Wonder, James Eccles, Loughgall; any variety, Earl of Bessborough, Kilkenny.

The foregoing is a list of the exhibitors having the best fruit; the second and third prize fruit in many cases were also meritorious, but space forbids enlarging the list.

Passing reference can only be made to other sections, such as vegetables and farm roots, honey, &c., all of which were strong features.

A small exhibit showing the system of grading and packing apples, and the different packages used for these and small fruits, which was put up by the Department of Agriculture, attracted much attention, and led to many enquiries regarding the packages and the method of grading. Three barrels of apples, showing the different grades, were on view.

Now that the subject of packing apples is receiving so much attention from the growers, a class, or classes, for packed fruit would provide a desirable feature, and would encourage and develop this branch of the business.

The show, on the whole, was a great success, and well deserved the apt description—"that famous show"—used by the Countess of Aberdeen in her opening speech. (G. D.)

Royal Horticultural Society of Ireland.

THE monthly meeting of the council was held in the society's offices, 5 Molesworth Street,

Dublin, on the 18th ult., fourteen members being present, with Mr. E. D'Olier presiding. The schedule for an August show was amended and passed, and after discussion as to whether a summer show or a winter fruit show should be held next year, the project of the fruit show was carried, to which, of course, the

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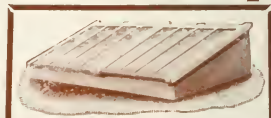
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A Manure that destroys Wireworm, Slugs and
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Kills all Weeds on Garden Paths, Walks, &c.,
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A year's account will be awarded. Arrangements must be made for auditing the year's accounts, and at a rough calculation it was shown that after clearing off sundry small items owing a balance of some £200 will show to the society's favour on the year's working. A special meeting of the council will be called for the end of the year for final arrangements for the annual general meeting, which will be held about the middle of the month and of which due notice will be posted to members. Mr. W. E. Sands, F.R.H.S., Hillsborough, Co. Down, was elected a member, and Mr. J. K. Morgan, Fribesdale, Edenderry, a practical member, the Larnan Sagart, and Clonsilla Horticultural Societies being affiliated. An exhibit of "catch-crop" potatoes sown in July on a plot from which the first crop had been lifted, arranged by Mr. Sands, potato specialist, Hillsborough, Co. Down, in the room, was awarded the society's cultural certificate.



1911 New Volume IRISH GARDENING

THE new volume will sustain the old standard of excellence as to authoritative articles on both the practical and scientific side of gardening, but new features and new writers will be introduced during the course of the year. Every Irish gardener and every owner of any sized garden in Ireland should obtain "Irish Gardening" (monthly) and read it! and having read it should preserve it for binding—it is worth it.

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These novelties we believe to be fairly true, but they are sold without any guarantee.

Thomas Stevenson, orange scarlet, waved (10 seeds), 1-; the gem for 1911 (stock limited); Maud Holmes, the best of the sun-proof crimsons or King Edward Spencers, waved (25 seeds), 1- (10 seeds), 6d.; Helen Grosvenor, a glorified Helen Lewis (10 seeds), 1-; Amethyst, fine rosy lilac waved (10 seeds), 6d.; Burpee's Ethel Roosevelt, bright rose flake on cream ground, waved (10 seeds), 6d.; Burpee's Florence Nightingale, lavender Spencer (10 seeds), 6d.; Romani Rauni, pale pink on cream, waved (10 seeds), 1-; Seashell, cream pink, waved, stock very limited (6 seeds), 6d.; Edwin's Doris Burt, a grand bright scarlet, shaded, or flushed cerise, waved, highly recommended (12 seeds), 6d.; Burpee's Rose du Barri, unique and distinct, a charming flower of deep rose, shot or overlaid with terra-cotta, grandiflora type, very effective under artificial light (20 seeds), 6d.; Zarina, pale coral pink, waved (20 seeds), 4d.; Ruby, an improved St. George (10 seeds), 6d.; Miriam Beaver, when true very like Syeira Lee, one of the most beautiful Sweet Peas yet raised (10 seeds), 1-.

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FULL LIST OF FLOWER AND VEGETABLE SEEDS POST FREE ON APPLICATION

The Dublin Wholesale Markets.

A GENERAL breakdown of business might be the best words to describe the markets during November. From the second week until the time of writing a ripe bonanza (one has characterised the markets) a much faster demand for all classes of produce exists than has been the case for some time. I noticed a great improvement in the quality of stuff being marketed, especially in grading.

Fruit continues to arrive in large quantities, principally from foreign sources, yet some exceedingly good lots of home-grown apples and pears have been marketed lately—Newton Wonder, Warner's King, and Lord Derby being the best, and commanding fine prices. Bramley's Seedling is selling at a good paying price at present, and, I think, will continue to become dearer. Some splendid samples of Pitmaston's Duchess pear have been marketed lately, and, I believe, got the best price obtained this year for pears.

Flowers, though plentiful, were mostly chrysanthemums. This popular flower is being marketed in larger quantities each year—Moneymaker, Market White, Ivory White, and Market Red being the most plentiful of named sorts. Violets and Lily of the Valley were about equal to the demand. If the severe weather continues flowers are likely to reach very high prices. Narcissi and tulips are to be seen in small quantities, more as a show than for sale.

Vegetables are now much better than last month, and prices are rising for all classes. Cabbage is very plentiful. Savoy is now making its first appearance. Red cabbage is in continuous demand at prices that are seldom obtained for greens. Roots, such as parsnips, carrots, beet, and turnips were selling at good prices. Handy bundles of a few vegetables and pot-herbs, suitable for broth, are easily and profitably disposed of.

The following are the prices:—

FRUIT		From	To
Apples, Lord Derby,	per ½ bushel	3 0	3 6
Do. Newton Wonder,	do.	2 6	3 3
Do. Golden Noble,	per doz.	1 0	2 4
Do. Bramley's Seedling,	per barrel	17 0	21 0
Pears, Pitmaston's Duchess,	per doz.	7 6	9 6
Do. Unnamed (dessert),	do.	2 0	4 0
Grapes, Alicante,	per lb.	0 10	1 6
Do. Gros Colman,	do.	0 8	1 2

FLOWERS			
Chrysanthemums,	per bunch	1 6	2 6
Violets,	per doz.	0 6	1 0
Smilax,	per bunch	0 7	0 9
Lily of the Valley,	per doz. flowers	0 9	1 1
Aurum Lilies,	do.	1 9	3 0

VEGETABLES			
Artichokes,	per float	0 10	1 3
Brussels Sprouts,	do.	0 11	2 3
Beet,	per doz.	0 5	0 8
Broccoli,	per basket,	3 6	5 0
Cabbage,	per load	9 0	13 0
Do. Savoy,	do.	6 0	10 0
Do. Red,	per doz.	1 0	1 8
Celery, Red,	per doz.	0 8	1 0
Do. White,	do.	0 10	1 4
Carrots,	do.	0 5	0 9
Leeks,	do.	0 2½	0 4
Lettuce,	do.	0 2	0 6
Mint,	per doz. bunches	1 8	1 0
Parsley,	per float	0 5	0 9
Parsnips,	per doz. bunches	0 7	0 11
Spinach,	per float	0 5	0 9
Turnips (Garden),	per bunch	0 1½	0 4
Do. (Swedes),	per cwt.	0 8	1 0
Thyme,	per doz. bunches	0 10	1 4
Sage,	do.	0 9	1 1

20th Nov., 1910.

ROBERT HUGH CLARKE.

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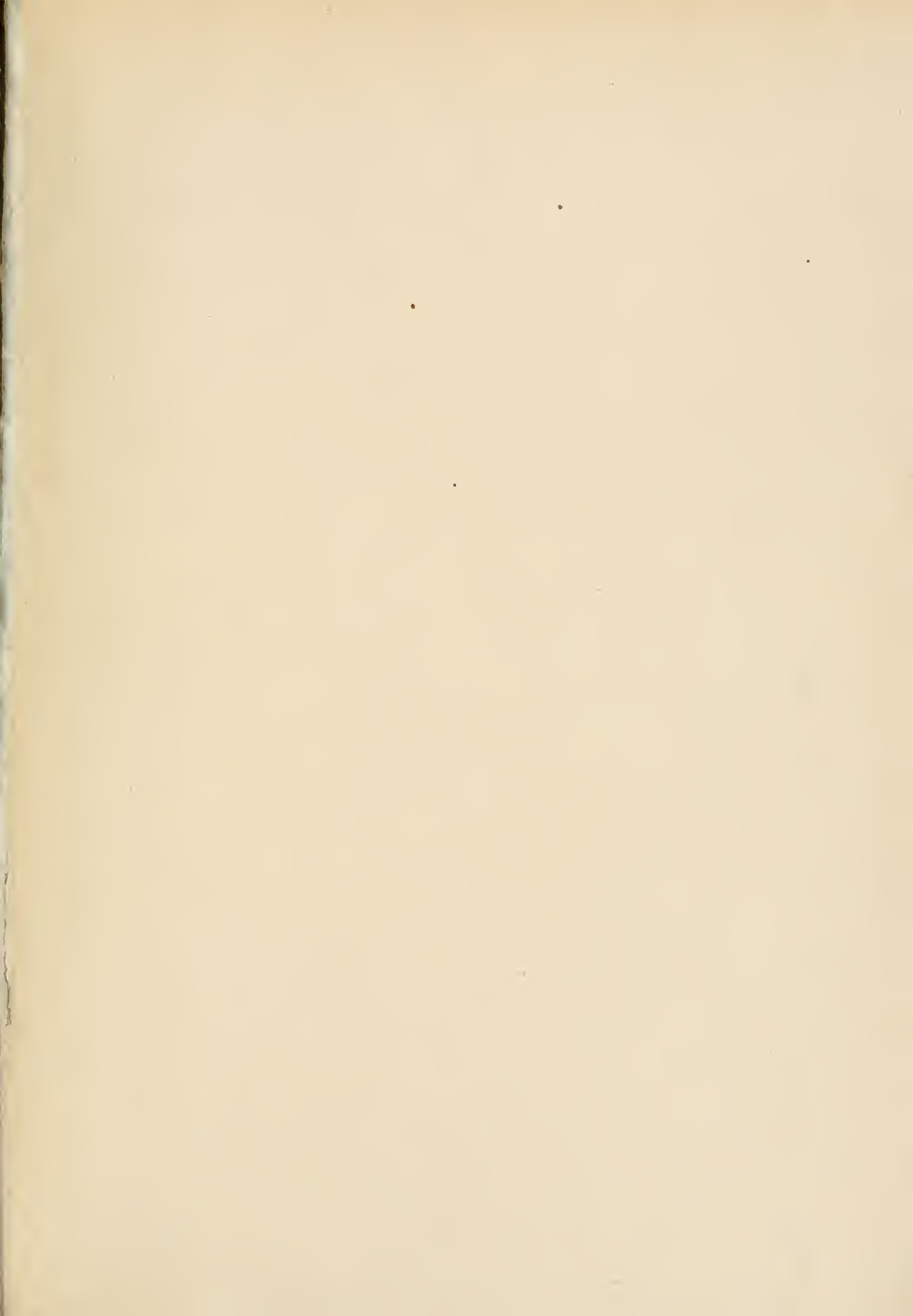
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